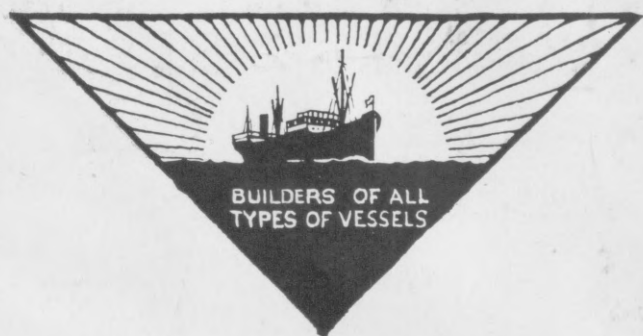
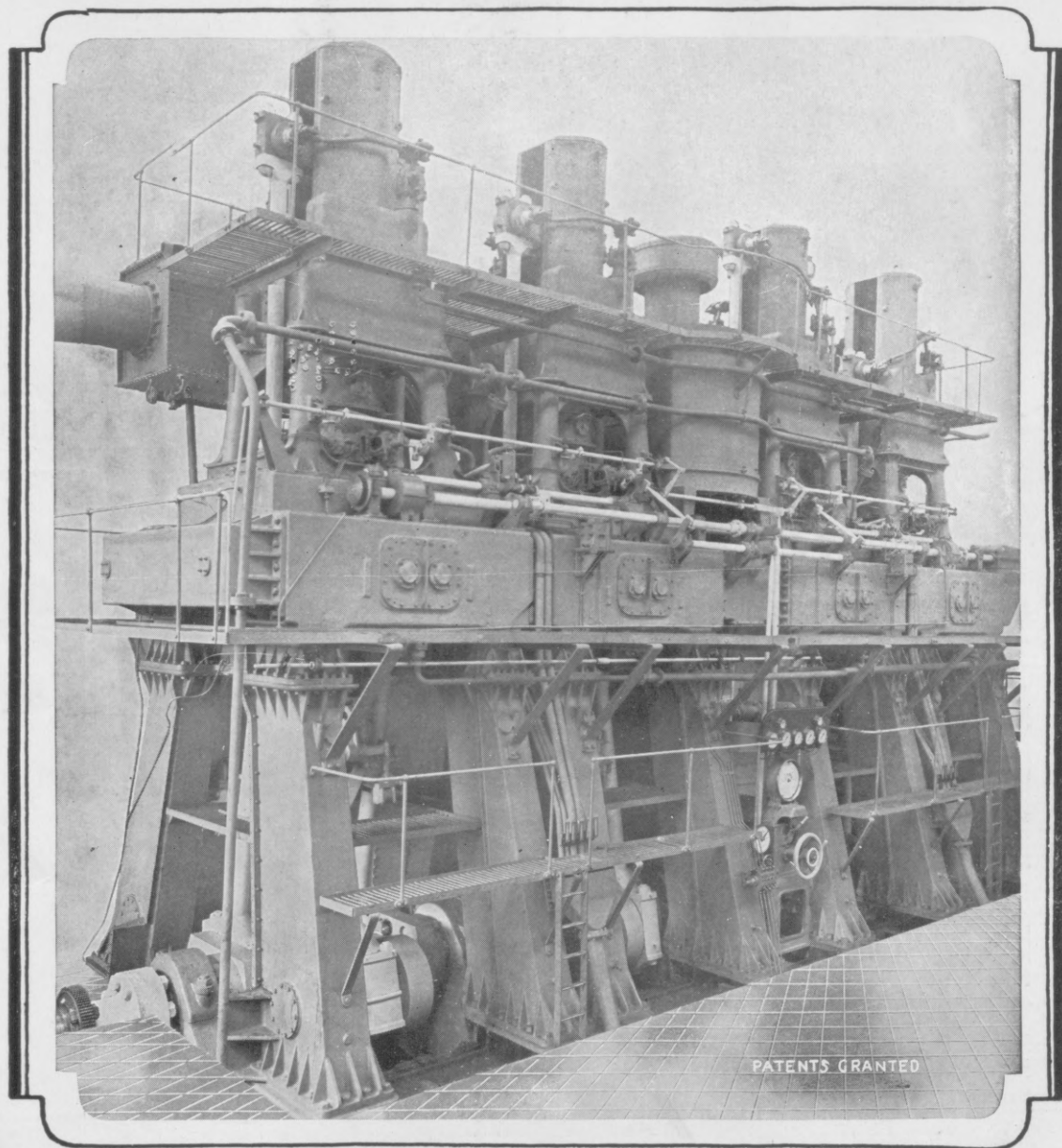


# SUN SHIPBUILDING & DIESEL



Builders and Sole  
**SUN - DOXFORD**  
**TWO - CYCLE**



3000 I. H. P. at 76 R. P. M.  
ON SINGLE SCREW



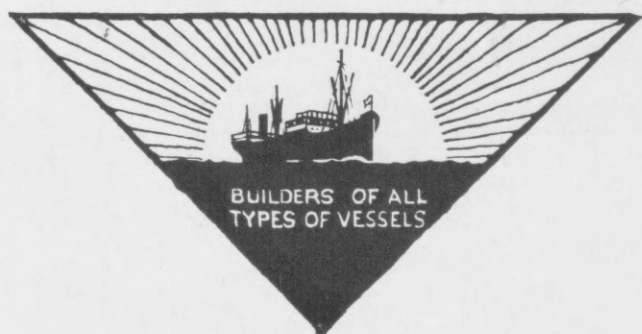
## SUN - DOXFORD AND

PHILADELPHIA OFFICE  
FINANCE BUILDING

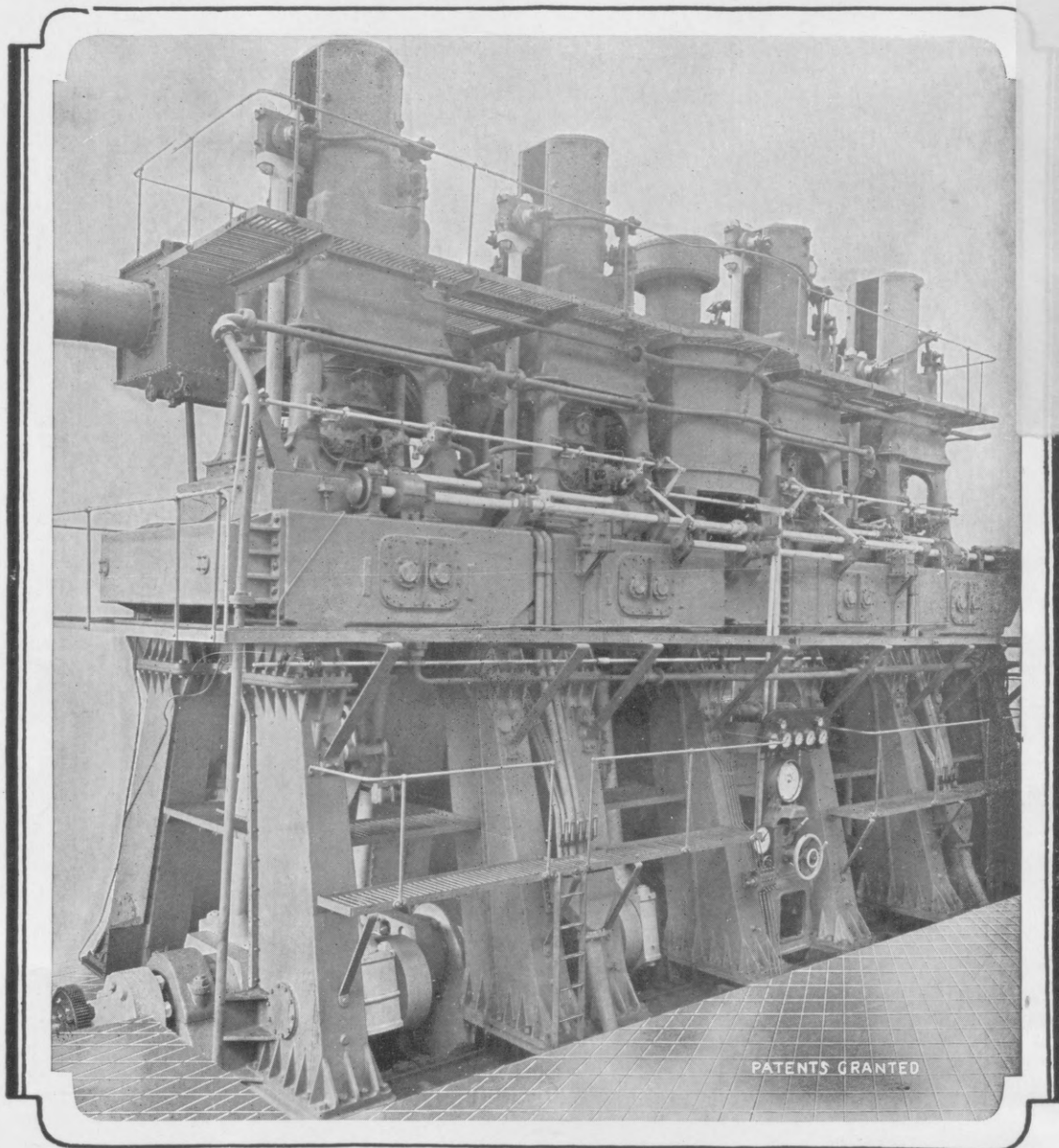
MAIN OFFICE  
CHESTER, PA.

"MOTORSHIP" for January, 1924. Vol. 9, No. 1. A monthly journal published by Motorship, at 27 Pearl St., New York City. Subscription three dollars the year, domestic; three dollars, fifty cents foreign. Entered as second-class matter at the Post Office at New York, N. Y., U. S. A., July, 1918, under Act of March 3rd, 1879. Office of publication, 27 Pearl St., New York City.

# SUN SHIPBUILDING DIESEL



Builders  
**SUN - DOXFORD**  
**TWO - CYCLE**



**3000 I. H. P. at 76 R. P. M.  
ON SINGLE SCREW**



## **SUN - DOXFORD AND**

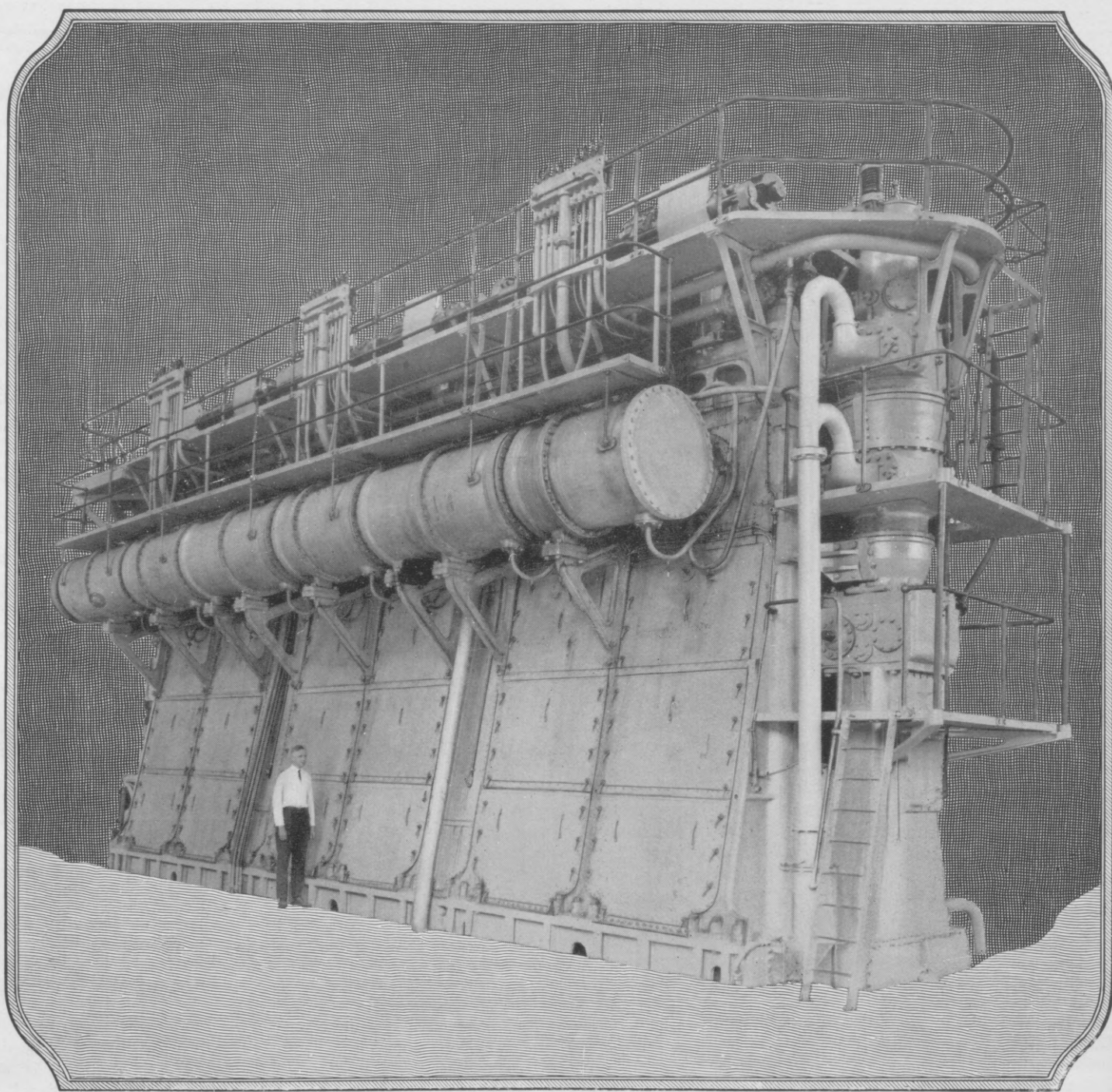
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"MOTORSHIP" for February, 1924. Vol. IX, No. 2. A monthly journal published by MOTORSHIP, Lyon Block, Albany, N. Y. Editorial, Advertising and Subscription offices at 27 Pearl St., New York City. Subscription three dollars the year, domestic; three dollars fifty cents foreign. Second class entry at Post Office at Albany, N. Y. pending.

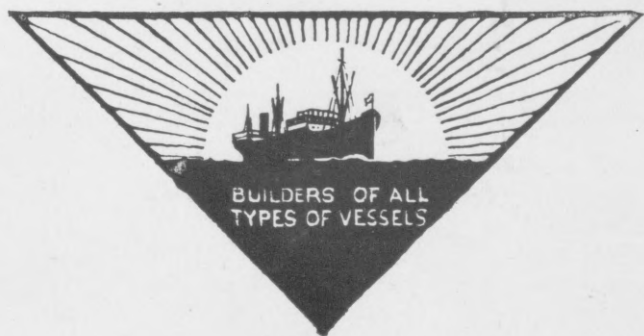


# Bethlehem perfects two-cycle, high-

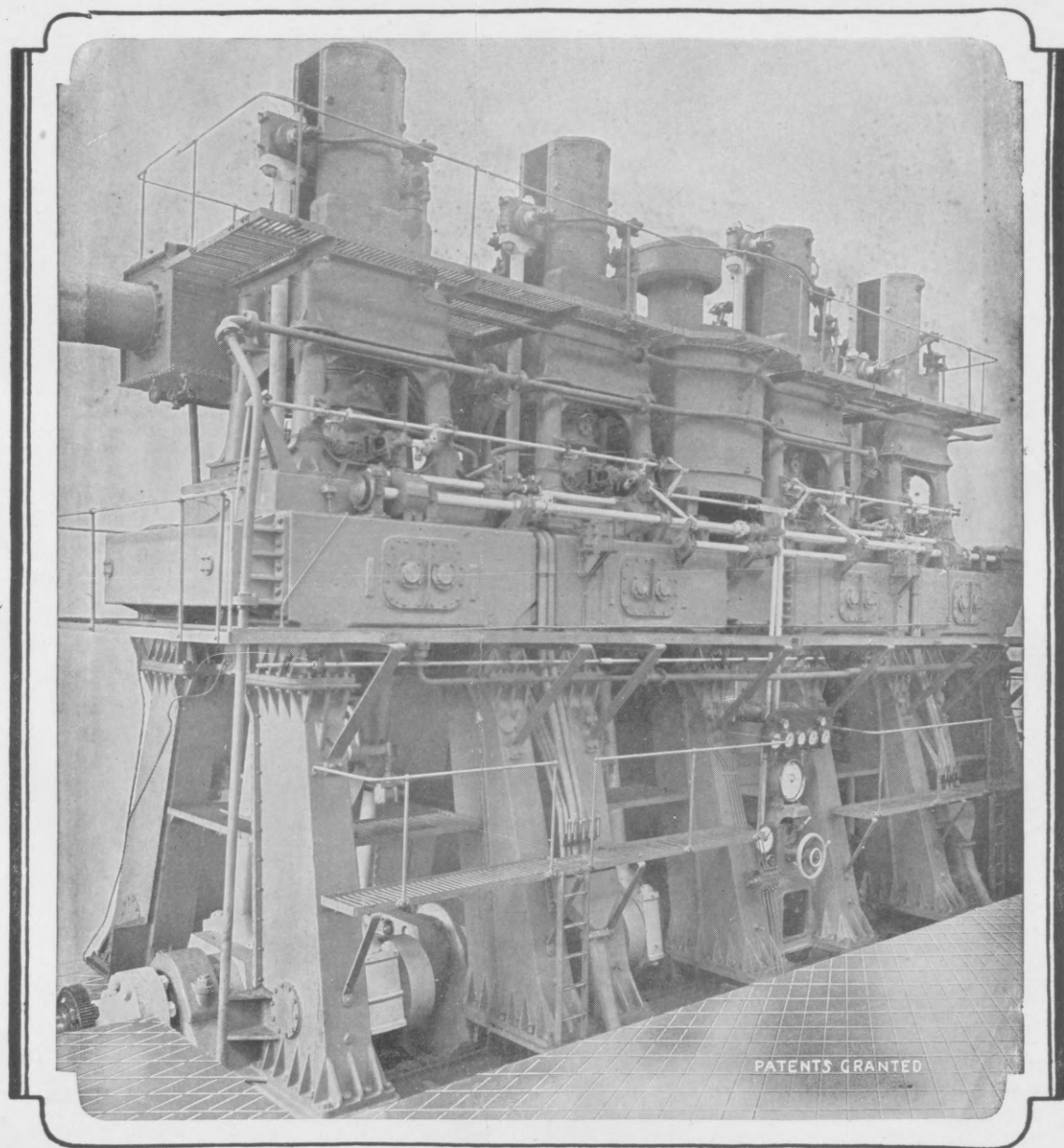


The Bethlehem Oil Engine is of the two-stroke cycle single-acting type, and runs at 90 R.P.M. for single screw and 115 R.P.M. for twin screw vessels. Fuel is injected into the cylinders in a highly atomized form by the aid of compressed air, ignition being caused solely by the heat of the compressed air into which the fuel is injected.

# SUN SHIPBUILDING & DIESEL



Builders and Sole  
**SUN - DOXFORD**  
**TWO - CYCLE**



3000 I. H. P. at 76 R. P. M.  
ON SINGLE SCREW



## SUN - DOXFORD AND

PHILADELPHIA OFFICE

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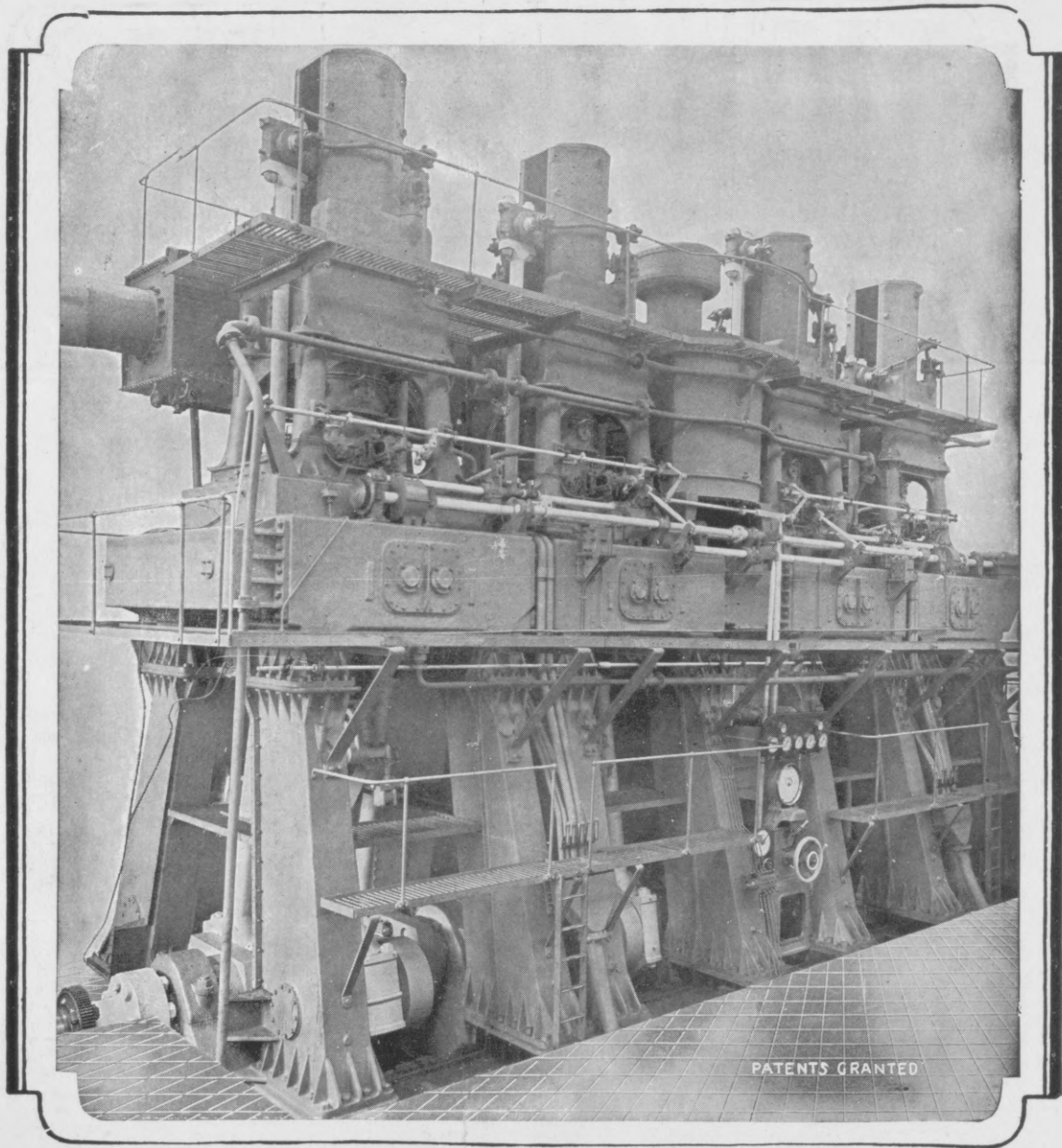
"MOTORSHIP" for March, 1924. Vol. IX, No. 3. A monthly journal published by MOTORSHIP, Lyon Block, Albany, N. Y. Editorial, Advertising and Subscription offices at 27 Pearl St., New York City. Subscription three dollars the year, domestic; three dollars fifty cents foreign. Second class entry at Post Office at Albany, N. Y. pending.



# SUN SHIPBUILDING & DIESEL



Builders and Sole  
**SUN - DOXFORD**  
**TWO - CYCLE**



42,000 H. P. of Sun-Doxford Diesel Engines under construction for all purposes.

3000 I. H. P. at 76 R. P. M.  
ON SINGLE SCREW



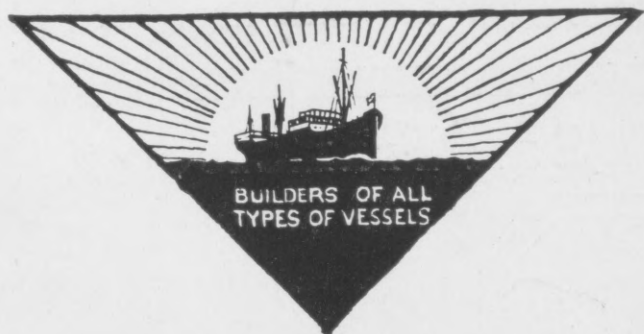
## SUN - DOXFORD AND

PHILADELPHIA OFFICE  
FINANCE BUILDING

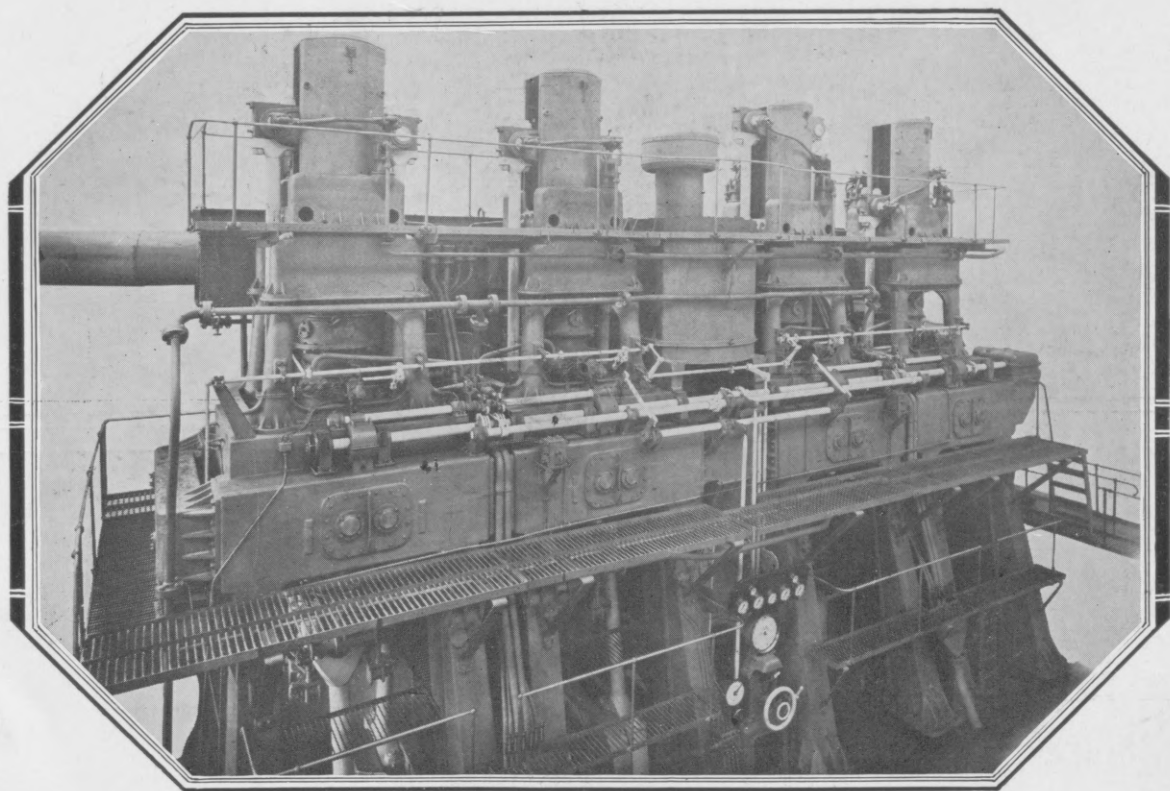
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"MOTORSHIP" for April, 1924. Vol. IX, No. 4. A monthly journal published by MOTORSHIP, 305 Washington Street, Brooklyn, New York. Editorial, Advertising and Subscription office at 27 Pearl Street, New York City. Subscription three dollars the year, domestic; three dollars fifty cents foreign.

# SUN SHIPBUILDING & DIESEL

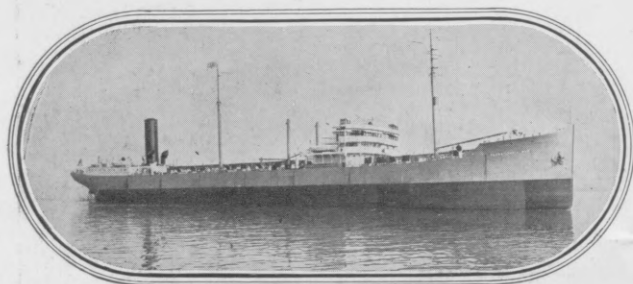


Builders and Sole  
**SUN - DOXFORD**  
**TWO - CYCLE**

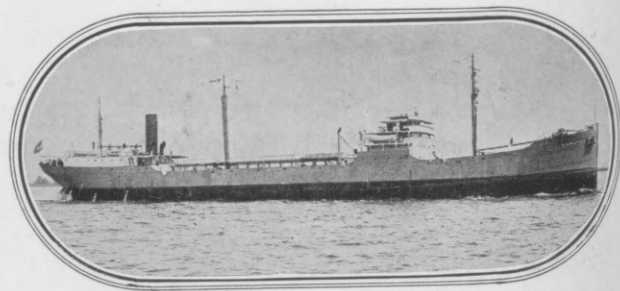


3000 I. H. P. at 76 R. P. M.  
**ON SINGLE SCREW**

42,000 H. P. of Sun-Doxford Diesel Engines  
under construction for all purposes



S. S. "PENNSYLVANIA SUN"  
12500 D. W. T.  
4500 I. H. P.



M. S. "MILLER COUNTY"  
Oil Tanker  
Sun-Doxford Engine 3000 I. H. P.

## SUN - DOXFORD AND

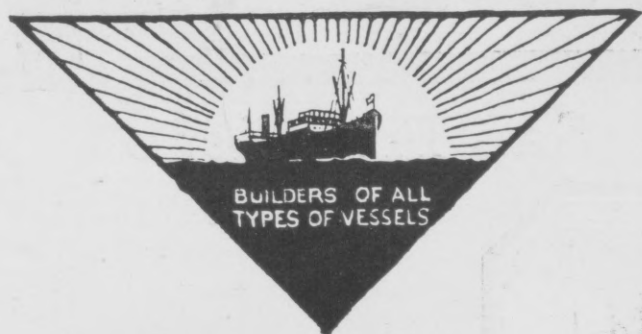
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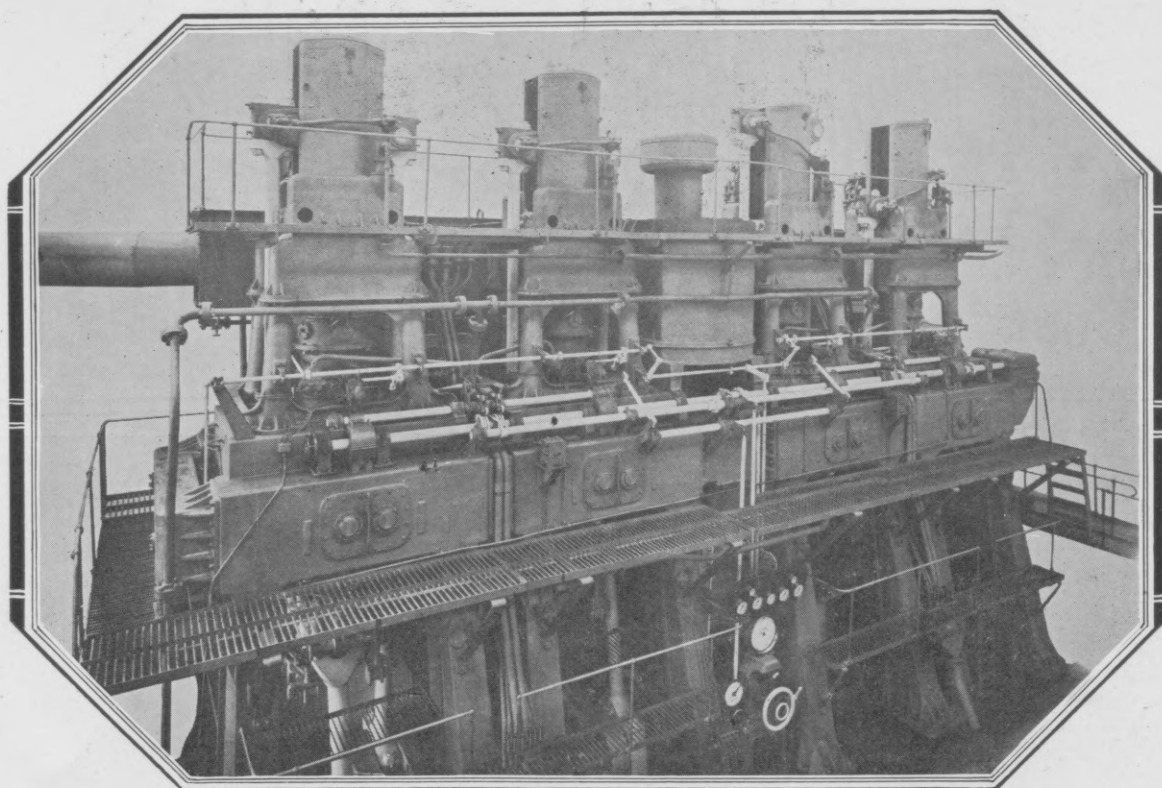
"MOTORSHIP" for May, 1924. Vol. IX, No. 5. A monthly journal published by MOTORSHIP, 305 Washington Street, Brooklyn, New York. Editorial, Advertising  
Subscription office at 27 Pearl Street, New York City. Subscription three dollars the year, domestic; three dollars fifty cents, foreign



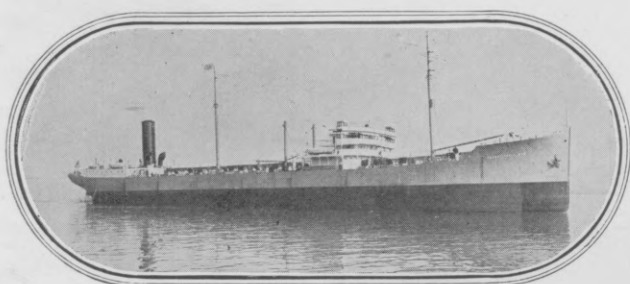
# SUN SHIPBUILDING & DIESEL



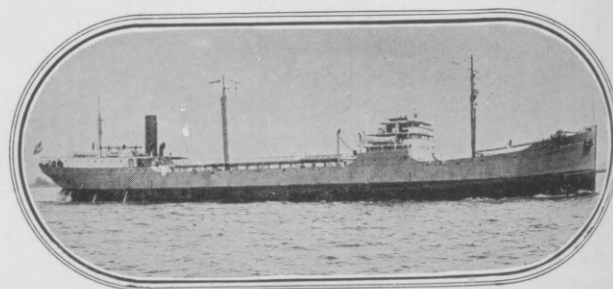
Builders and Sole  
**SUN - DOXFORD**  
**TWO - CYCLE**



3000 I. H. P. at 76 R. P. M.  
**ON SINGLE SCREW**  
42,000 H. P. of Sun-Doxford Diesel Engines  
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S. S. "PENNSYLVANIA SUN"  
12500 D. W. T.  
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M. S. "MILLER COUNTY"  
Oil Tanker  
Sun-Doxford Engine 3000 I. H. P.

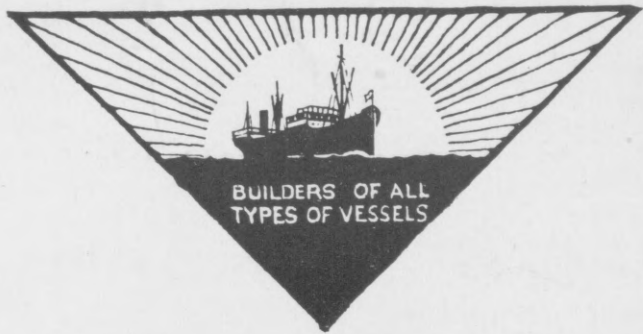
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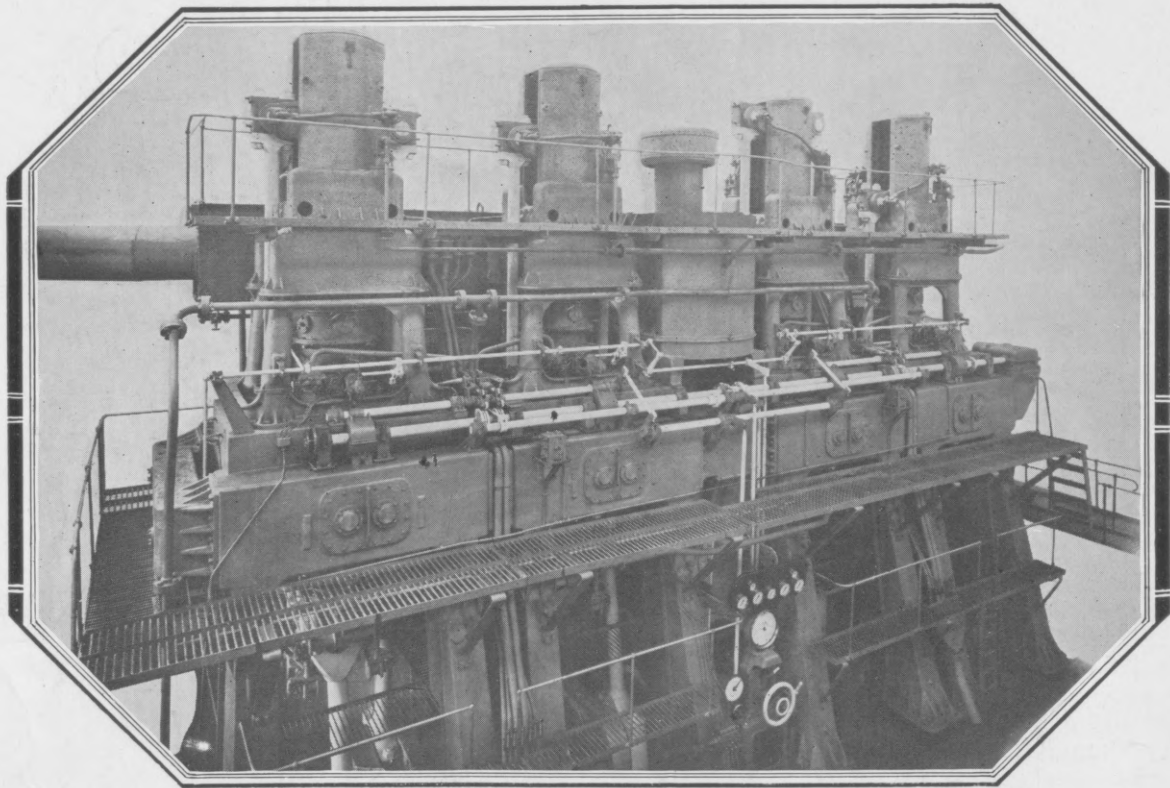
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"MOTORSHIP" for June, 1924, Vol. IX, No. 6. A monthly journal published by MOTORSHIP, 305 Washington Street, Brooklyn, New York. Editorial, Advertising and Subscription office at 27 Pearl Street, New York City. Application for entry in the Post Office at New York is pending. - Subscription three dollars the year domestic three dollars fifty cents, foreign.

# SUN SHIPBUILDING DIESEL

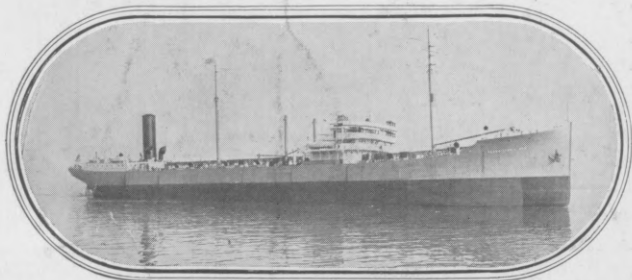


Builders and So  
**SUN - DOXFORD**  
**TWO - CYCLE**

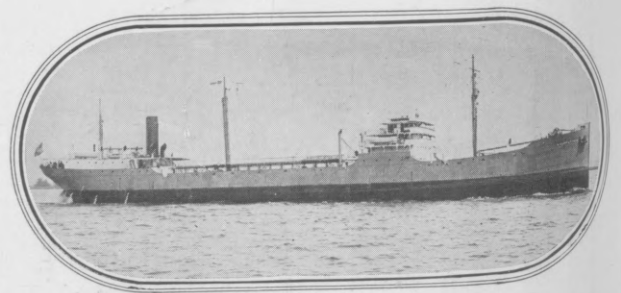


3000 I. H. P. at 76 R. P. M.  
**ON SINGLE SCREW**

42,000 H. P. of Sun-Doxford Diesel Engines  
under construction for all purposes



S. S. "PENNSYLVANIA SUN"  
12500 D. W. T.  
4500 I. H. P.



M. S. "MILLER COUNTY"  
Oil Tanker  
Sun-Doxford Engine 3000 I. H. P

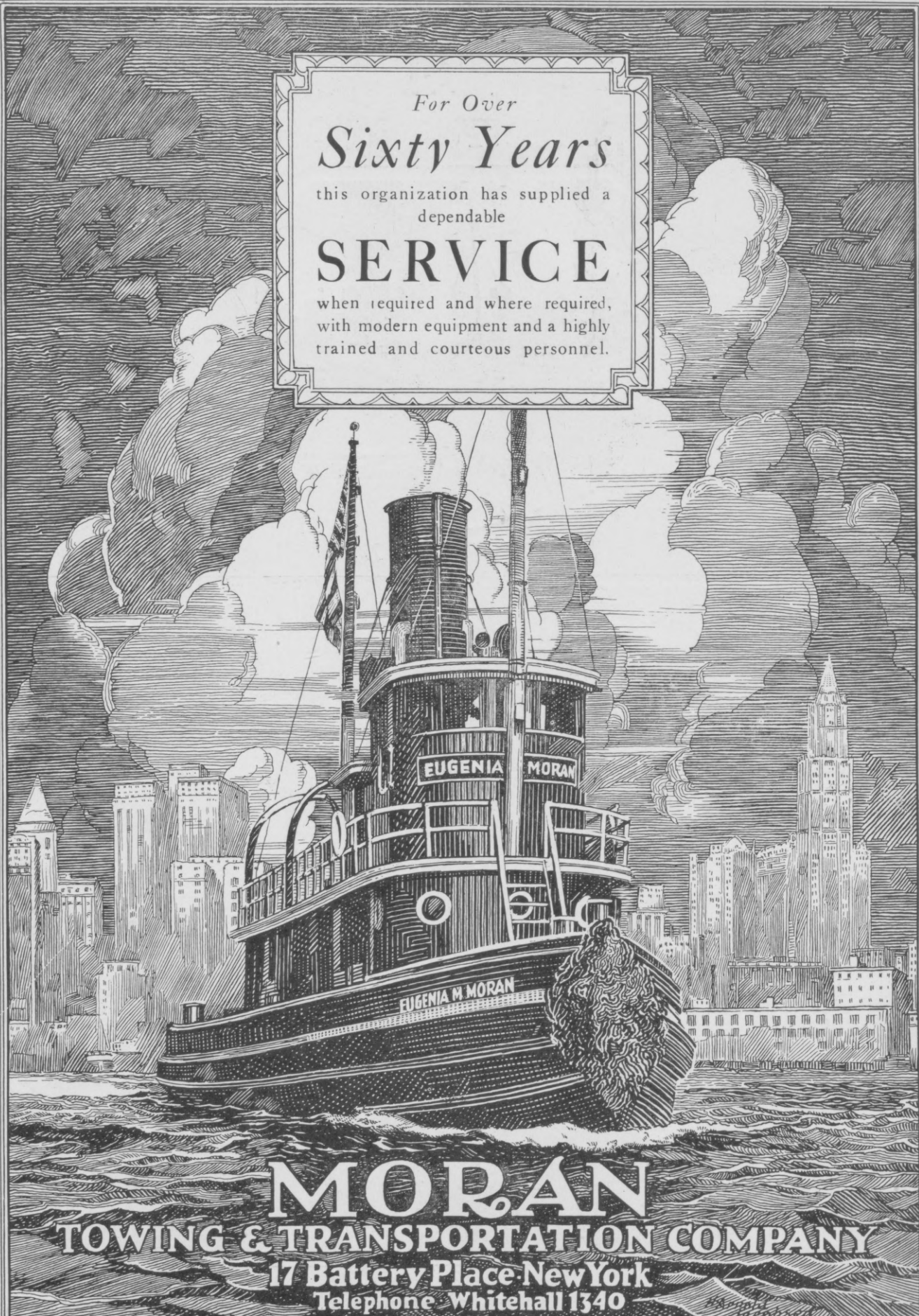
## SUN - DOXFORD AN

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"MOTORSHIP" for July, 1924. Vol. IX, No. 7. A monthly journal published by MOTORSHIP, at 27 Pearl Street, New York, N. Y. Entered as second class mail July 16, 1918, at the Post Office, New York, under the Act of March 3, 1879. Additional entry at Brooklyn, N. Y. Subscription, \$3.00 per year, domestic; \$3.50, foreign.





*For Over*  
**Sixty Years**  
this organization has supplied a  
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when required and where required,  
with modern equipment and a highly  
trained and courteous personnel.

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**TOWING & TRANSPORTATION COMPANY**  
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# Bethlehem-Trout Heavy-Oil Engine

Bethlehem has acquired from H. G. Trout Company the exclusive right to manufacture and sell the Trout Engine.

Important changes in design and construction have been made and the improved engine, called the Bethlehem-Trout Heavy-Oil Engine, is available in sizes from 50 to 480 Brake Horsepower.

This engine is a two-cycle, single-acting, Diesel-type engine, with port scavenging

and airless fuel injection (Leissner System). Scavenging air is supplied by an attached, independent pump.

For propelling tugs, ferryboats, lighters, yachts, and for driving generators, pumps, and other machinery, the Bethlehem-Trout Engine is a thoroughly satisfactory power unit. It is dependable, simple to operate, economical to maintain—and very low in its fuel consumption.

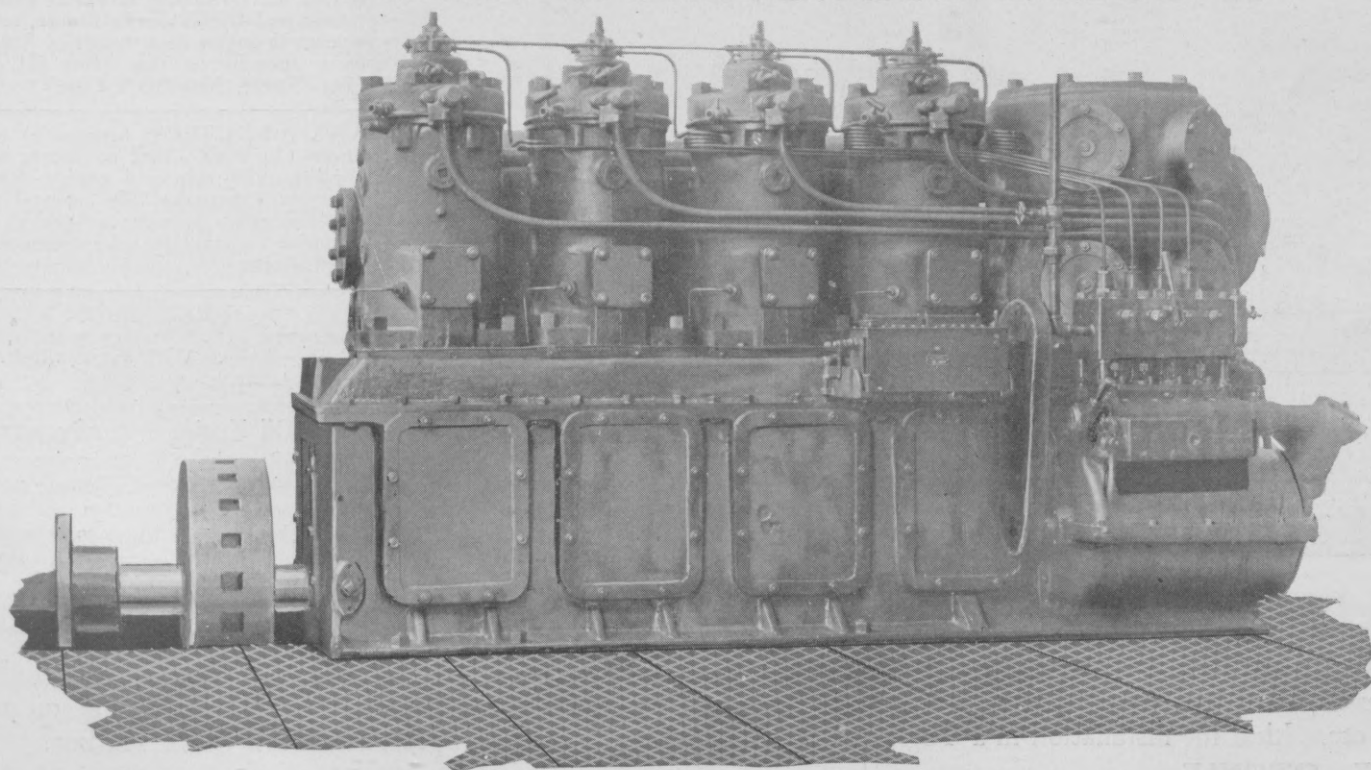
Ask for full particulars.

BETHLEHEM SHIPBUILDING CORPORATION, LTD., BETHLEHEM, PA.

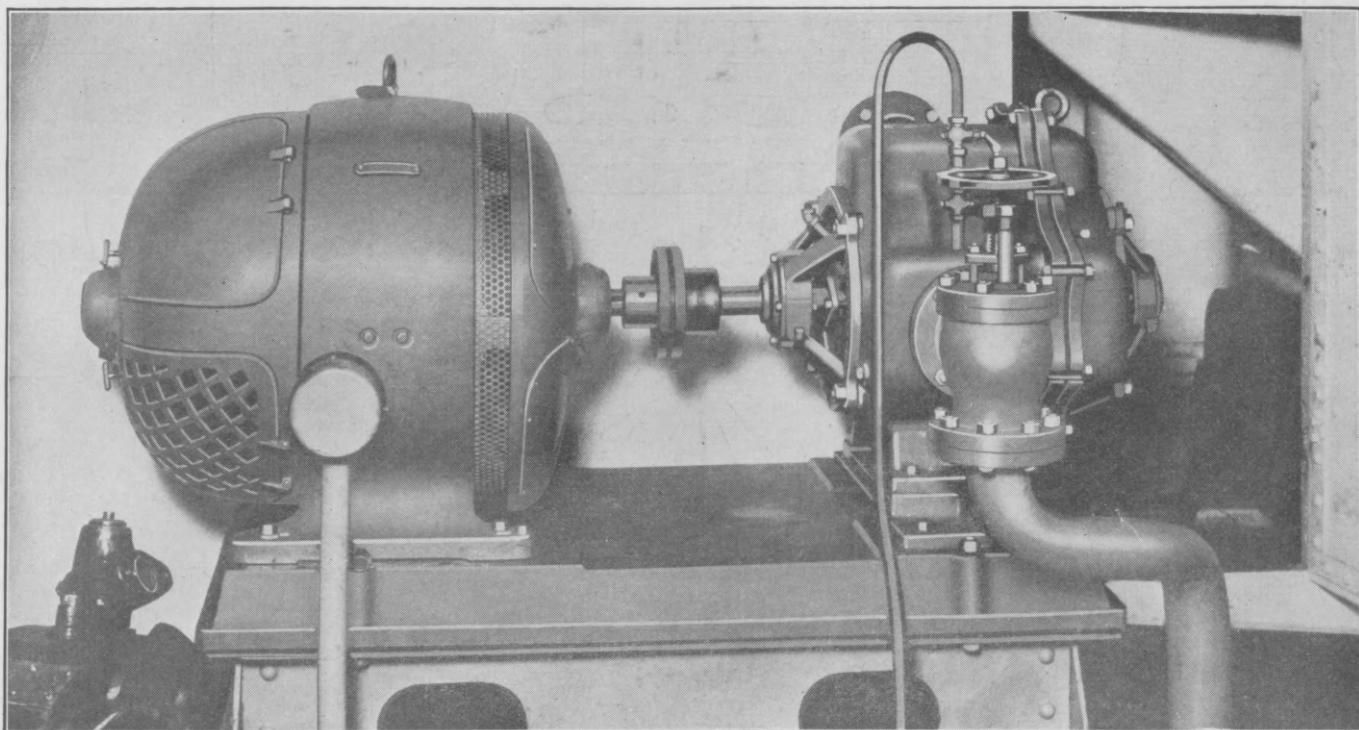
GENERAL SALES OFFICES: 25 BROADWAY, NEW YORK CITY

Sales Offices: Boston, 141 Milk St.; Philadelphia, Widener Bldg.; Wilmington, Foot of West St.; Baltimore, Gay and Lombard Sts.; San Francisco, Matson Bldg.

## BETHLEHEM







## Vital to ballast pump operation

THE two new lake motorships, **Benson Ford** and **Henry Ford II**, of the Ford Motor Company, are each equipped with a ballast system which is perhaps the most elaborate that has ever been installed on an ore carrier.

The pumping equipment consists of two main centrifugal pumps, having a capacity of 7000 G.P.M. each, and two auxiliary pumps each of 2500 G.P.M. capacity. These pumps are connected to a manifold, provided with suitable connections to the double water bottoms and to the fore peak, and so arranged that any compartment can be filled or emptied at will.

Nash Hytor Vacuum Pumps, motor driven, are depended on for maintaining a vacuum of 18 to 20 in. in the centrifugal pumps and thus for keeping them primed. Under these conditions the suction lift cannot be lost, and efficient unfailing operation is insured at all times.

For this purpose, Nash Hytors are indispensable. In fact, the very maintenance of the necessary vacuum is vital to satisfactory operation. Otherwise, air inleakage would quickly destroy the suction lift and make the ballast pumps inoperative.

Since the total quantity of water ballast, 7390 tons, must be discharged in about two to three hours, continuity in operation is an important consideration. Hence the characteristic unfailing performance of the Nash Hytors cannot be estimated too highly.

Then, too, the use of Nash Hytors permits the installation of the comparatively inexpensive centrifugal units, thereby avoiding the costliness and complications of reciprocating equipment.

Two motor driven Nash Hytor Air compressors are also installed, and used as direct pressure pumps, discharging sewage from the soil tanks by means of air under 20 lbs. working pressure.

*For complete information, write for bulletins*

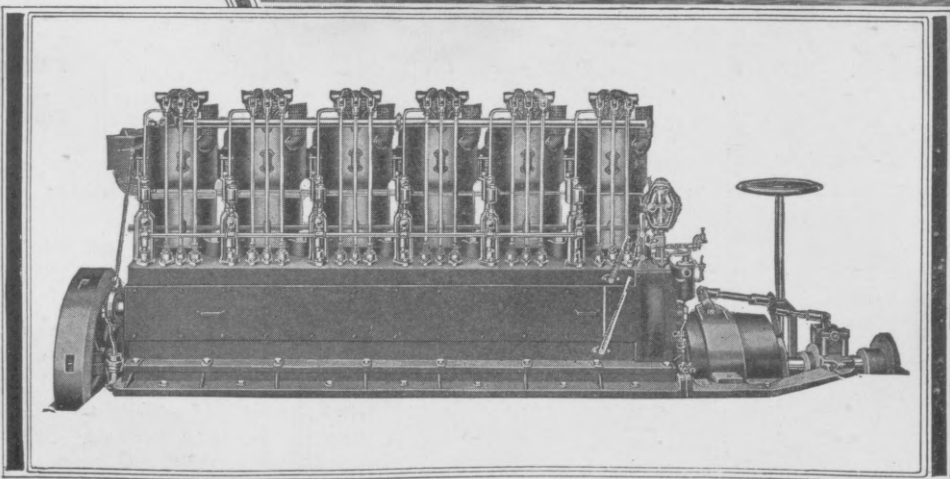
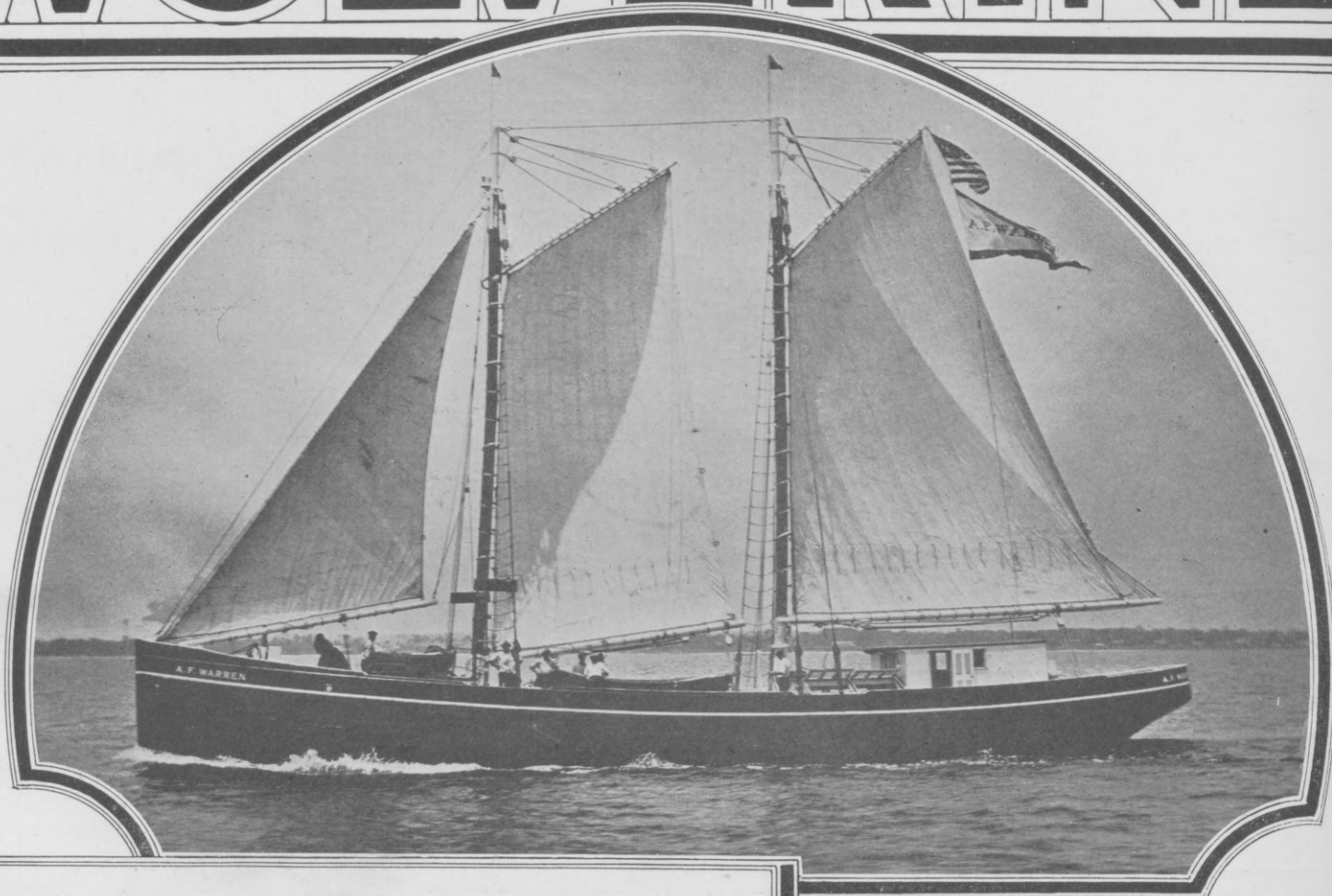
# Nash Hytor

NASH ENGINEERING CO



SOUTH NORWALK CONN

# WOLVERINE



## CRUDE OIL MARINE ENGINES

THE Motor Schooner A. F. WARREN, illustrated above, is owned and operated in the Red Snapper Fisheries of the Gulf of Mexico by the Warren Fish Company, Pensacola, Fla.

The A. F. WARREN is a distinctly new type of craft, designed especially for the fishery from suggestions made by Capt. F. W. Wallace, editor of "Fishing Gazette." She is 91' 5" x 22' x 12', equipped with auxiliary sails.

Powered with a six-cylinder, 150-hp. WOLVERINE Crude Oil Engine, the A. F. WARREN was built to act as a model for the entire Red Snapper Fisheries and the finest of equipment and materials were used throughout.

It was only logical that a WOLVERINE engine should have been selected, as dependability and economy were vital requirements. Send for Catalogue No. 155.

## WOLVERINE MOTOR WORKS

24 UNION AVENUE

BRIDGEPORT, CONNECTICUT

U. S. A.

"MOTORSHIP" for October, 1924. Vol. IX, No. 10. A monthly journal published by MOTORSHIP, at 27 Pearl Street, New York, N. Y. Entered as second class matter July 16, 1918, at the Post Office, New York, under the Act of March 3, 1879. Subscription, \$3.00 per year, domestic; \$3.50, foreign. This issue published in two sections of which this is Section I. Price, this issue (including Section II), \$1.25.



---

# Twenty-six Years Of Our Own Experience in Building DIESEL ENGINES

In addition to which we have the experience of Sulzer Bros., who are partners in our company. We are prepared to build Diesels of proven Sulzer type in capacities up to 4000 b.h.p. per engine.

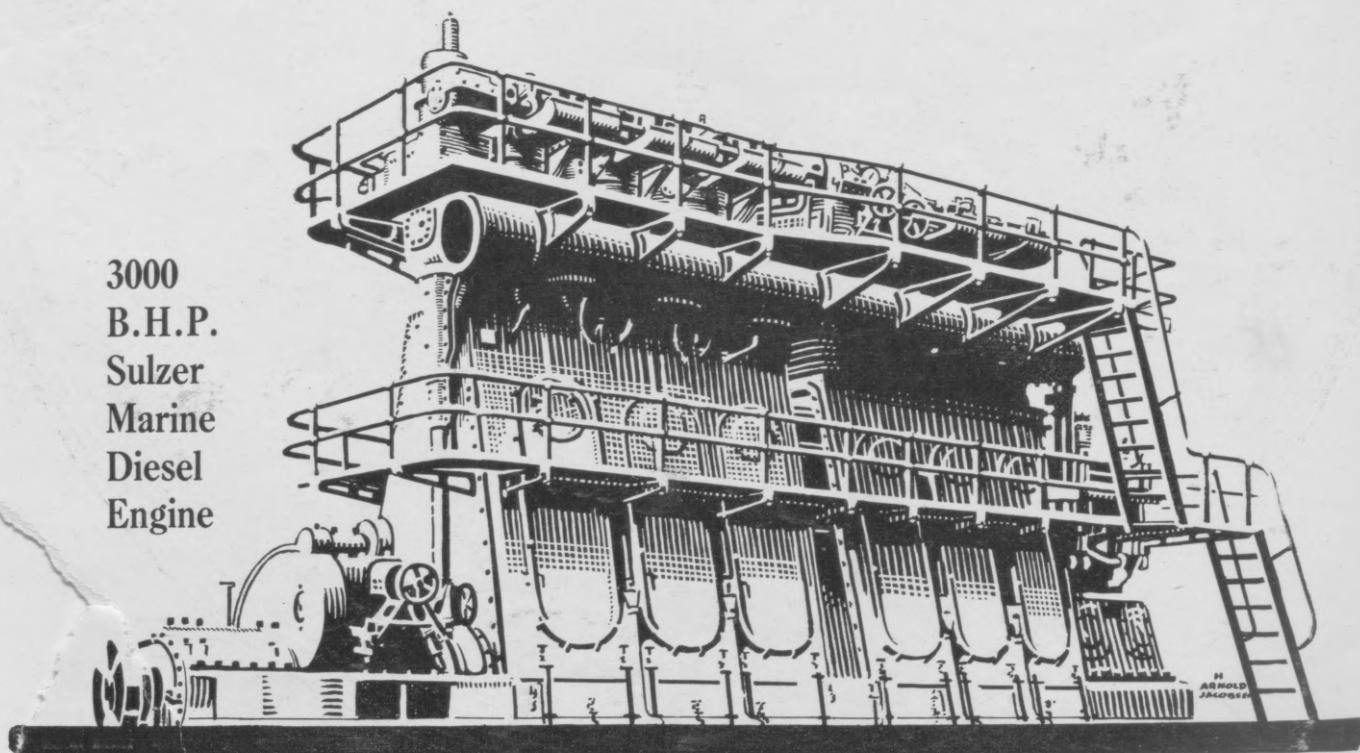
**BUSCH-SULZER BROS.-DIESEL ENGINE CO.**

60 Broadway, New York

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Rialto Bldg., San Francisco

3000  
B.H.P.  
Sulzer  
Marine  
Diesel  
Engine





WE HAVE SUCCESSFULLY EQUIPPED

47

SEA GOING VESSELS

WITH

DIESEL ENGINES

Some of Which Are Entering  
Their Eighth Year of Service

---

In the Language of Packard

*"Ask the man who owns one"*

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**McINTOSH & SEYMOUR**  
**CORPORATION**  
AUBURN, NEW YORK

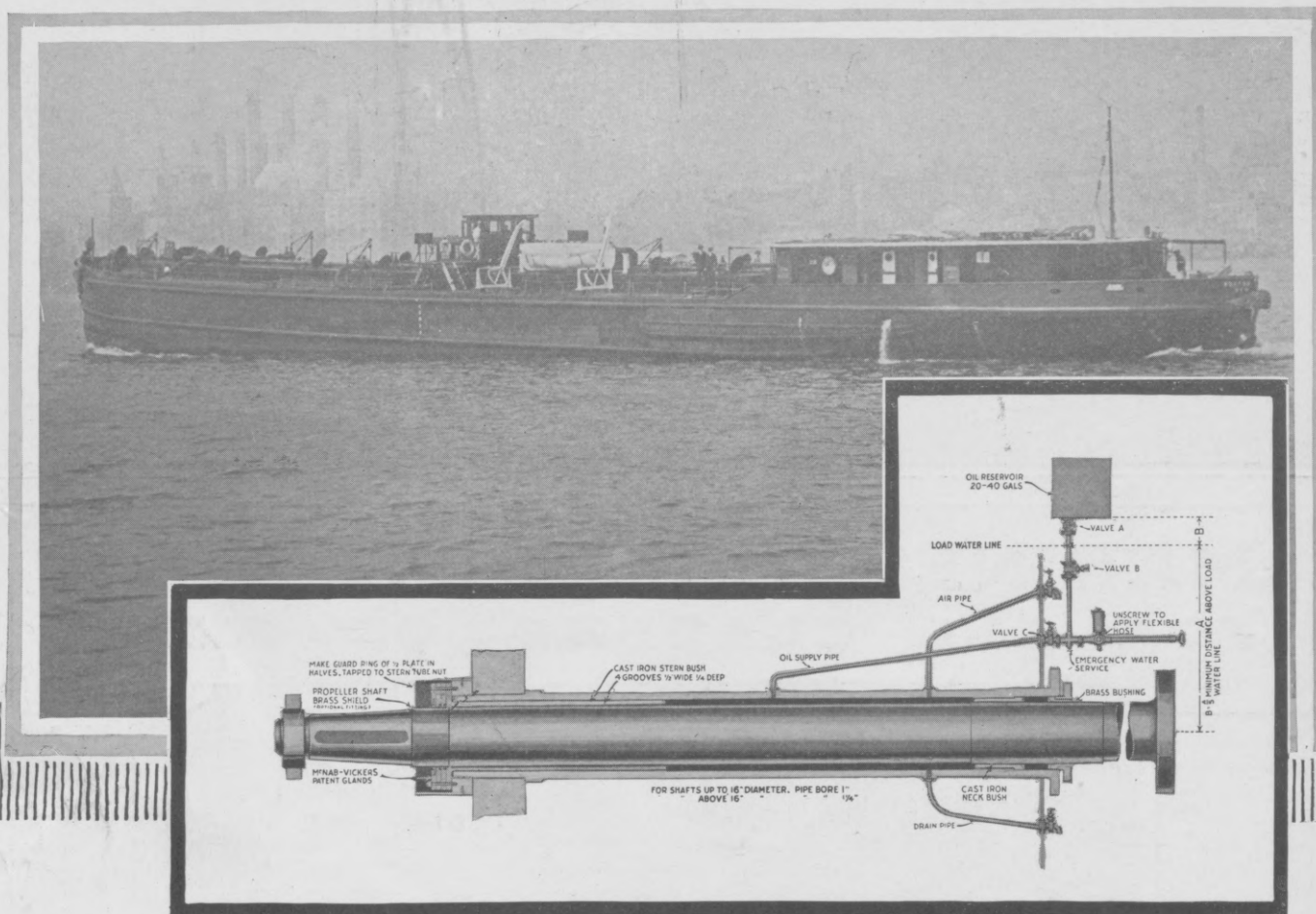


# McNAB "VISTA" SYSTEM

## Of Propeller Shaft Lubrication

PATENTED

## *Assists Ship Conversion*



The Eight Standard Oil Company's Motor Barges, put into commission early this year, are all equipped with McNAB "VISTA" SYSTEM OF PROPELLER SHAFT LUBRICATION (forty-eight shaft fittings). These Barges are 256 feet long and are each powered with a 700 H.P. McIntosh & Seymour Diesel Engine.

### WHY INCREASE SHAFT DIAMETER?

In conversion from steam to Diesel propulsion, a shaft of larger diameter can be used in the same stern tube, as a **linerless** steel shaft having an extreme diameter the same as the former over liners, can be readily fitted. This eliminates the expense in stern tube or stern post alteration.

### WHY EXPERIMENT?

When many ocean-going ships have been in continuous service for years with **plain steel linerless shafts** protected by the McNab "VISTA" System. This system is approved by Lloyds, British Corporation, and other classification societies, also adopted by the United States, British, French, Italian and other Governments, and by the principal steamship lines throughout the world.

### ADVANTAGES OF CORRECT LUBRICATION

A stronger shaft. Prevention of corrosion or rust in stern tube. Friction and vibration reduced. No hidden fractures as under liners. Less cost to install. Time in dry dock frequently reduced. Sand kept out of stern bush and wear minimized. This System can be used in connection with a Cast Iron, White Metal or Lignum Vitae bush. Also with a continuous Liner or two separate Bronze Liners, or a plain Steel Linerless Shaft.

### INVESTIGATE OUR CLAIMS

A very interesting booklet has been compiled, giving results obtained from the installation of the McNab "VISTA" System on the larger type of ship; you are cordially invited to write for a copy, which will show you how time and money can be saved by this fitting.

### PATENTEES AND MANUFACTURERS

BRIDGEPORT

The McNab Company

CONN.

# There is a Remedy for This:



A remedy that will relieve you from the nuisance and expense of frequent valve replacements, valve regrinding and other valve repairs.

**Proof:** Diesel engines equipped with "Nichrome" Valves, running more than 30,000 miles with no carbon on valves—free from pitting, scaling, corrosion, distortion or annealing. And still going. Burning low grade fuels, too.

And now that "Nichrome" valves have conclusively demonstrated that frequent valve repairs and replacements are no longer a "necessary evil," that "Nichrome" Valves have conquered carbon, pitting, scaling, corrosion, etc., you need no longer tolerate them, nor the labor, expense and loss of power that they cause.

Why not get complete data—NOW. Write. No obligations.

DRIVER-HARRIS COMPANY  
HARRISON, N. J.

Branch Offices:—Chicago and Detroit; British Driver-Harris Co., Manchester, England; Etablissements Driver-Harris, Gas-sicourt, France.

The efficiency and unparalleled economy of "Nichrome" have been proven in many different uses, in some of which the operating conditions are more severe than those to which Diesel engine valves are subjected.

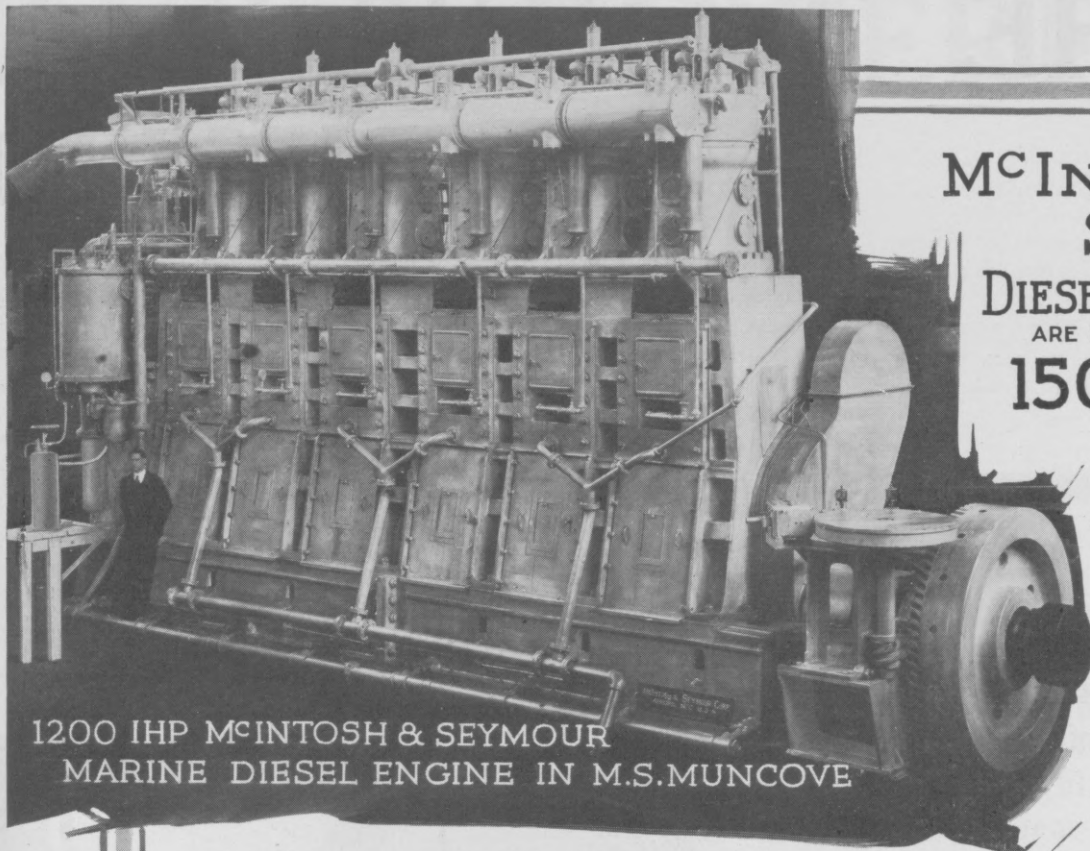
"Nichrome" is the Driver-Harris Trade Mark, applying to special alloys used in high temperatures, in oxidizing atmospheres, in processes involving certain chemical reactions, etc.

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# Nichrome

## The DRIVER-HARRIS VALVES





**McINTOSH &  
SEYMOUR**  
**DIESEL OIL ENGINES**  
ARE BUILT IN SIZES FROM  
**150 TO**  
**8000**  
INDICATED H.P.

1200 IHP McINTOSH & SEYMOUR  
MARINE DIESEL ENGINE IN M.S. MUNCOVE

## SHIP OWNERS & OPERATORS

PLEASE STUDY THIS TABLE

	COAL FIRED STEAM VESSEL	CONVERTED TO MOTORSHIP WITH STEAM AUXILIARIES	CONVERTED TO MOTORSHIP WITH DIESEL ELECTRIC AUXILIARIES
Deadweight Tons . . . . .	4125	4125	4125
Average Speed (Knots) . . .	8.5	8	8
Average Fuel Per Day (Tons)	28	8	4½
Ton/Miles of Cargo per Dollar Fuel Cost . . . . .	4300	9300	16,500

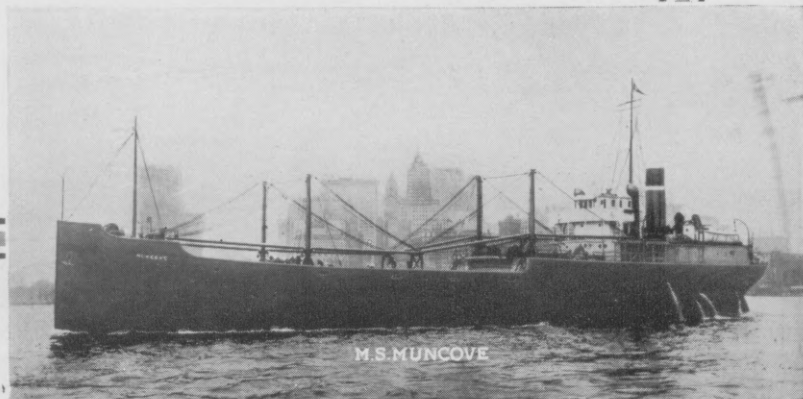
The above are actual results compiled from operating data of Sister Shipping Board  
Ships now operated by a prominent American shipping company.  
THE MOTORSHIPS were fitted with

## McINTOSH & SEYMOUR DIESEL OIL ENGINES FOR MARINE SERVICE

FULL PARTICULARS CAN BE OBTAINED FROM  
**McINTOSH & SEYMOUR CORPN**  
AUBURN, NEW YORK,

### SALES OFFICES

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HOUSTON, TEXAS      SAN FRANCISCO, CAL.  
412 BISBEE BLDG. 901 A&R BLDG. 1016 BALTIMORE AVE. 149 BROADWAY  
JACKSONVILLE, FLA.      KANSAS CITY, MO.      NEW YORK CITY



M.S. MUNCOVE

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# THE LARGEST AND MOST POWERFUL DIESEL ELECTRIC TUG

PENNSYLVANIA Railroad Tug No. 16 enjoys the distinction of being the first, largest, and most powerful Diesel-electric tug ever built.

P. R. R. No. 16 is 105 feet in length, has a beam of 24 feet and a draft of 12 feet. The hull and superstructure were built by the Staten Island Shipbuilding Co., and the machinery installation was made at the Hoboken Marine Yards of the Pennsylvania Railroad.

The power plant consists of two six-cylinder, four-cycle, 13 $\frac{1}{4}$ " x 18" Winton Diesel engines, each direct connected to a 235 K.W. 250-volt Westinghouse Generator. Operating at 275 R.P.M., each engine delivers 375 B.H.P., so that a combined output of 750 effective horsepower is available to meet the requirements for main and auxiliary power.



PENNSYLVANIA Railroad Tug No. 16 typifies the latest word in Diesel-Electric engineering. The engine room of this highly efficient tug is clean, compact, and clear of auxiliary machinery.

The two big Winton Diesel engines do their work quietly and dependably, and the entire power plant is under direct control of the man on the bridge. Instant response of the tug to his demands simplifies and speeds up its work in a degree surprising to experienced tug owners and operators.

Winton engineers, the men who built this largest and most powerful Diesel-Electric tug power plant, welcome an opportunity to discuss with you the advantages of this type of propulsion. Winton Diesel Engines in sizes from 100 to 500 H.P. are ideal for Electric Drive installations. Write for complete details.

## WINTON ENGINE WORKS, CLEVELAND, OHIO, U. S. A.

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LOS ANGELES—E. G. Bryant, 201 F. W. Braun Building

NEW ORLEANS, LA.—Agency  
WASHINGTON—R. L. Transportation Building

SEATTLE—H. W. Starrett, Sunset Engine Company  
BOSTON—Walter H. Moreton Corp., 780 Commonwealth Avenue



M/S BULLAREN

M/S TISNAREN

M/S BALBOA

M/S STUREHOLM

M/S BUENOS AIRES

M/S ELMAREN

M/S FRITIOF

# GÖTAVERKEN



**SHIPBUILDERS, SHIPREPAIRERS  
BUILDERS OF DIESELMOTORS  
MAIN LICENSEES FOR SWEDEN OF THE  
B & W-MOTORS**

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M/S OXELÖSUND

M/S LJUSNE JERNVERK

M/S HAMLET

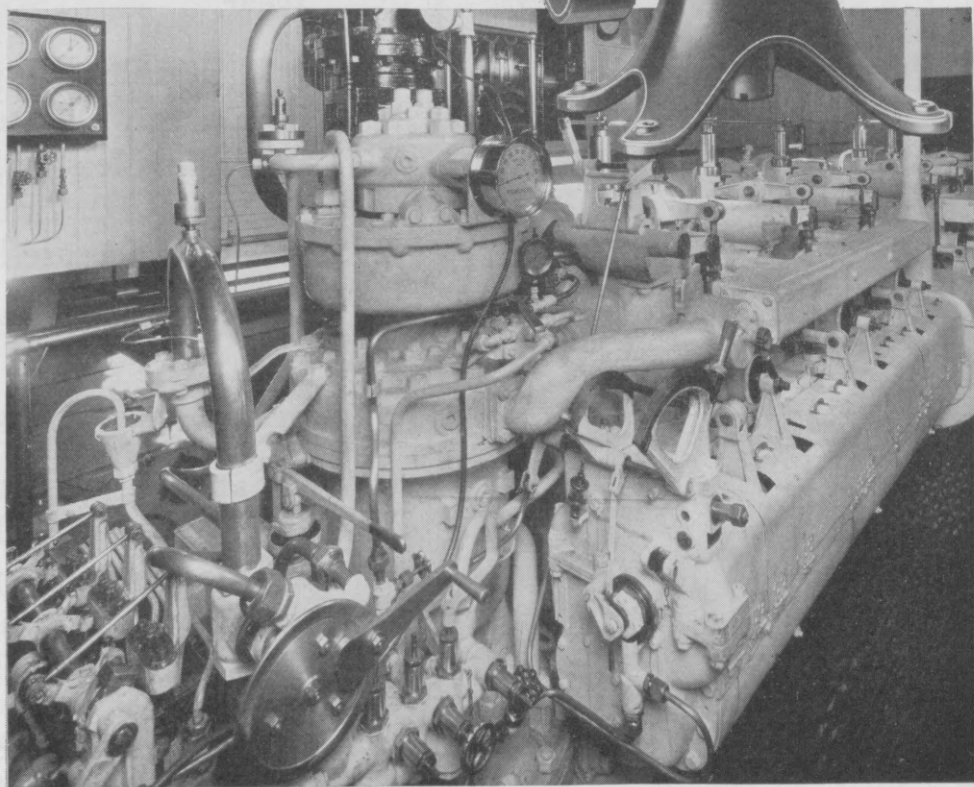
M/S NUOLJA

M/S CANADA

M/S ABISKO



## A De Laval Oil Purifier protects the engine of the largest Diesel-driven tug



The tugboat "Jumbo," built by the New London Ship & Engine Company and operated by the Transmarine Corporation, of New York, is said to be the highest-powered Diesel-driven vessel of its kind in America. Her power plant, consisting of a 600-h.p. Nelsco Diesel engine, is protected at all times with clean lubricating oil furnished by a De Laval Oil Purifier. This is the final touch in building a vessel to operate at minimum cost and with maximum reliability.

The Purifier is keeping the lubricating oil free from water and sludge so that wear on bearings is mini-

mized and all the trouble which follows the use of dirty oil is eliminated. In addition to this it makes it entirely safe to keep the same oil in service indefinitely, thereby effecting a considerable reduction in the cost of lubrication.

De Laval Oil Purifiers remove sludge and water from lubricating oil by a centrifugal force several thousand times greater than the force of gravity—and this force is made tremendously more effective by the De Laval system of strata distribution. There is no substitute for De Laval centrifugal purification.

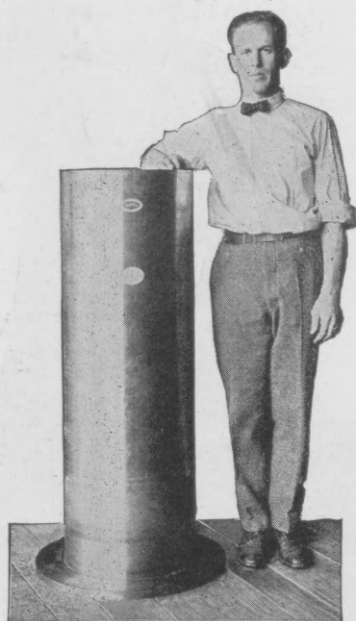
*Write for Bulletin No. 105, which gives full details*

**The De Laval Separator Company**

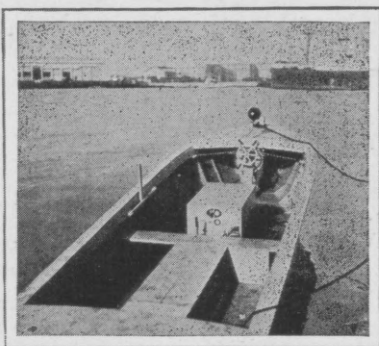
**New York, Chicago, San Francisco**

The De Laval Chadburn Co., Ltd., Wellington House, Buckingham Gate, London S. W. 1, England





A "Cutless Bearing" for an ocean-going vessel 13-15/32 in. shaft, 16-1/8 in. o. d. 48-1/2 in. over all.



For two years "Cutless Bearings" using water as a lubricant were operated on the muddy Colorado River on the Big Boulder Dam project, without replacing a single bearing.

**IMPORTANT**—The following reputable agents have "Cutless Bearings" in stock. Others are being rapidly appointed—

BOSTON, Walter H. Moreton Corp. and United Fisheries Company.

GLOUCESTER, MASS., United Fisheries Co.

NEW BEDFORD, MASS., Hathaway Mach. Co.

## Setting a New Standard of Bearing Service —

The use of rubber as a bearing surface has enabled Goodrich "Cutless Bearings" to set a new standard of bearing wear.

It permits using water as a lubricant. The tough Olivite rubber surface when wet offers less resistance to friction than a babbitted or other metal surface. Greatly increased bearing life results.

But long life is not the only advantage. The rubber acts as a shock absorber and shaft vibration is greatly reduced.

Sand or grit cannot become imbedded in the rubber walls. Water washes the sand out along a spiral groove or channel which runs along the bearing surface. This practically eliminates shaft scoring.

Goodrich "Cutless Bearings" are proven economies—they are used and recommended by leading ship-owners and naval architects on all types of vessels, from ocean-liners to motor-runabouts.

THE B. F. GOODRICH RUBBER COMPANY  
Akron, Ohio

ESTABLISHED 1870

# Goodrich

## Cutless Bearings

"BEST IN THE LONG RUN"

# And when we determined to build Diesels

We investigated every Diesel. For years, and at a great cost, we went into the subject thoroughly.

Out of it all there came to us this one outstanding conviction: The best Diesel in the world is made at Augsburg, Bavaria, by M. A. N. who made the first Diesel, the largest Diesel and a great aggregate of Diesel horse-power.

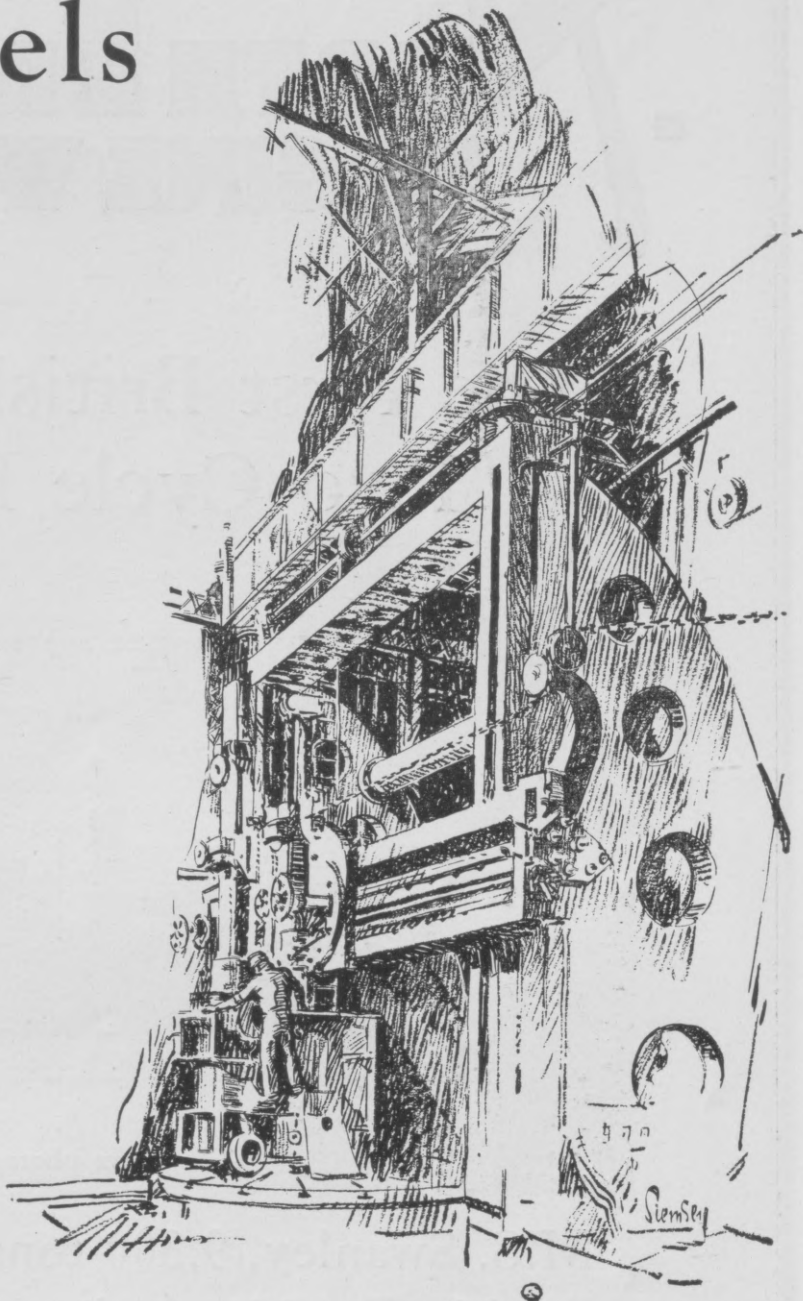
We secured the M. A. N. license and with it all the wealth of Diesel knowledge they had, all drawings and designs and information—everything necessary to build M. A. N. Diesels.

With this license and all it means; with our foundries, engine shops and big, modern tools—with Hamilton engineers and men accustomed to handling the biggest jobs as part of a day's work, we offer to American industry and shipping the Hamilton M. A. N. Diesel with full confidence.

Hamilton engineers and men have built half-a-million horse-power of steam marine engines. In one year we built more steam marine horse-power than any builder or shipyard in the world. This in itself shows we are able to build any type of large engine.

We would be glad to furnish specific detailed information to you if you are interested. Write to our Engineering Department.

THE HOOVEN, OWENS, RENTSCHLER CO.  
ENGINE BUILDERS SINCE 1845  
HAMILTON, OHIO



THIS BORING MILL GIVES SOME IDEA of the large tool equipment in the Hamilton Engine Shops. There is no job too big for our tools and men.

#### Hamilton Products:

CORLISS ENGINES	HAMILTON, M. A. N.
POPPET VALVE ENGINES	DIESEL ENGINES
UNIFLOW ENGINES	SUGAR MILLS
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MARINE ENGINES	PLATE GLASS
IRON AND SEMI-STEEL CASTING	MACHINERY
HAMILTON PRESSES	

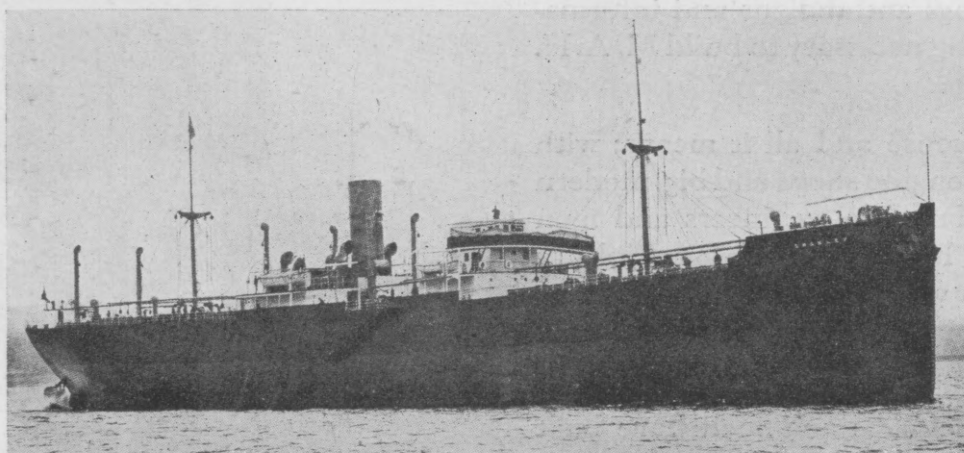
# HAMILTON

## M.A.N. Diesel



# NORTH BRITISH DIESEL ENGINE WORKS (1922) LTD

## The First British Double-Acting Two-Cycle Engined Ship.



The above photograph illustrates the

M.S. Swanley, 9,300 tons D.W., fitted with North  
British Double-Acting Engines of 2,250 I.H.P.

The ship has completed a maiden voyage from Cardiff  
to Colombo with perfect success, carrying her full dead-  
weight, at approximately 10 knots speed, and with  
a consumption for her main engine of  $6\frac{1}{4}$  tons per day.

North British Diesel Engine Works (1922), Ltd.  
Whiteinch, Glasgow.

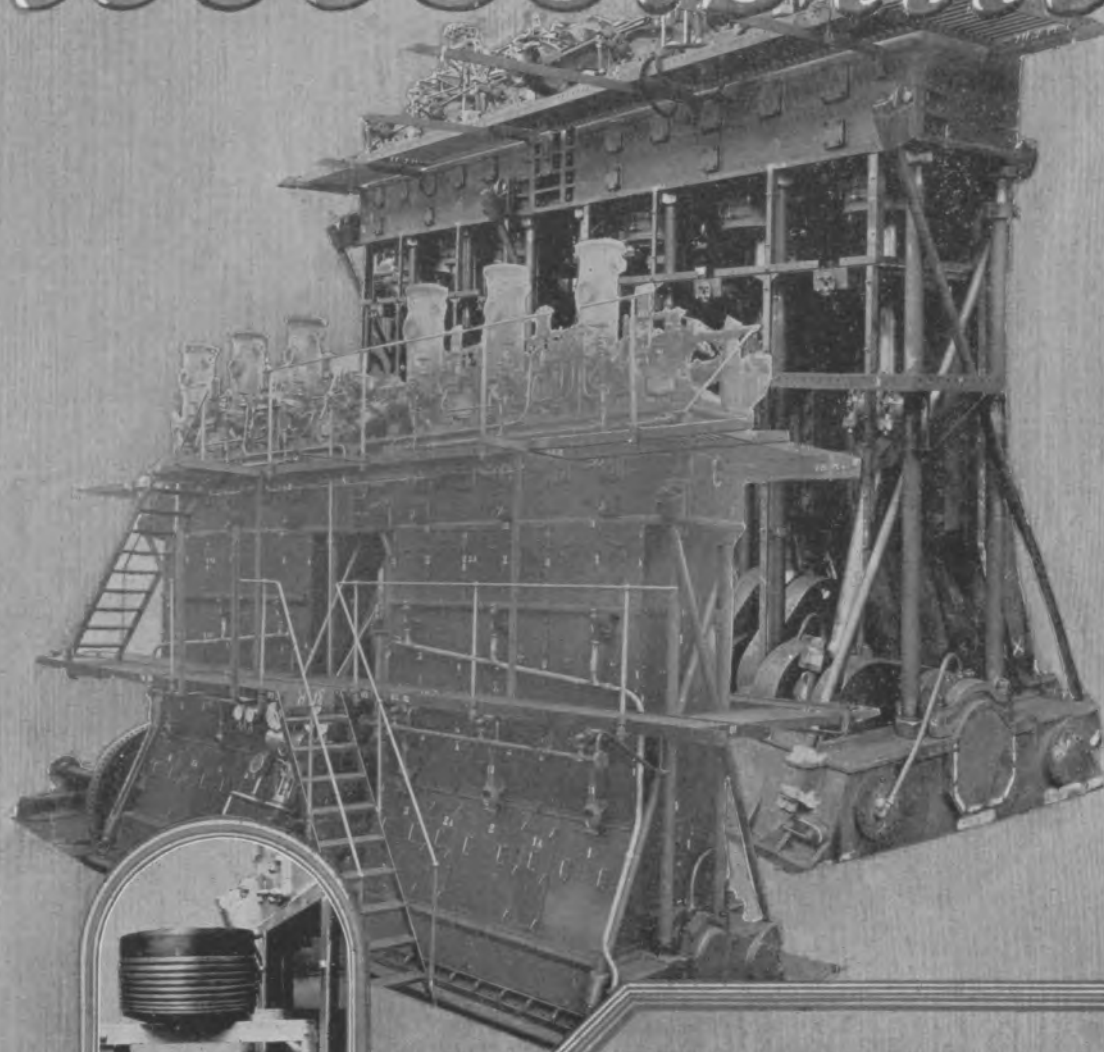
Telephone: 3620 Western.

Codes: ABC (5th Edition), Bentley's Complete Phrase.

Grams: "FORDOMOUNT, GLASGOW."

*(Manufacturers of Single-acting and Double-acting Diesel Engines up to 1000 horsepower per crank)*

# Accessibility



Method of rapid removal  
of piston

**I**N every power unit this feature is synonymous with reliability. A Diesel engine that is not accessible cannot be reliable over a long period of operation at sea.

Here is an engine which represents the highest form of accessibility—hence reliability, and favorably stands comparison with any other make.

In the Werkspoor engine of today is embodied 15 years experience with design, construction and operation of Diesel marine oil-engines. Its short length and low-weight are important factors where steamer conversions are being considered. Then, before you make your selection—compare designs and performances.

## AMERICAN LICENSEES

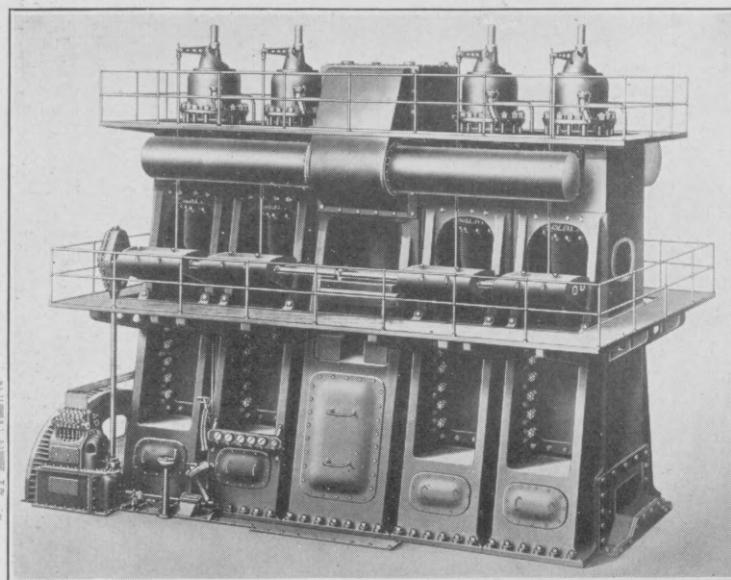
NEWPORT NEWS SHIPBUILDING & DRY DOCK CO.  
NEW YORK SHIPBUILDING CORPORATION  
PACIFIC DIESEL ENGINE COMPANY

REPRESENTATIVE FOR U. S. A. AND CANADA: WILLIAM BRAAT WOOLWORTH BUILDING NEW YORK CITY

# Werkspoor Amsterdam



3000 H. P. Worthington Double Acting  
Two Cycle Oil Engine—equipped with  
American Hammered Piston Rings



**T**HE modern Diesel engine is a triumph of American engineering skill and makes possible restoration of the American Merchant Marine to its former position of world leadership.

The Worthington Pump and Machinery Corporation, and the other leading Diesel Engine Manufacturers, use American Hammered Piston Rings exclusively.

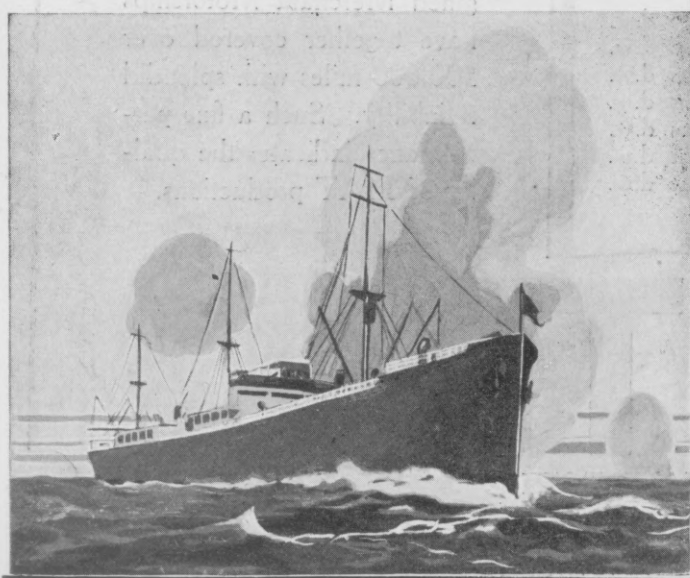
**AMERICAN HAMMERED PISTON RING COMPANY**  
BALTIMORE, MARYLAND

**American**  
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# OIL FUEL



## The Power behind the Modern Engine Room



### EFFICIENT. CLEAN. ECONOMICAL.

Oil Fuel for Motor Ships' and/or Steamers' bunkers and/or Industrial Purposes is available at the following ports through The Asiatic Petroleum Company, Limited

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| * Amsterdam                      | * Houston (Texas)                       | * Port Sudan            |
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| * Barton (Manchester Ship Canal) | * Liverpool                             | * St. Vincent           |
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† Diesel Oil only available

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BUYERS desiring information regarding supplies of and price for Oil Fuel for use in Internal-combustion Engines or for other purposes should apply to The Asiatic Petroleum Co., Ltd., at the address below.

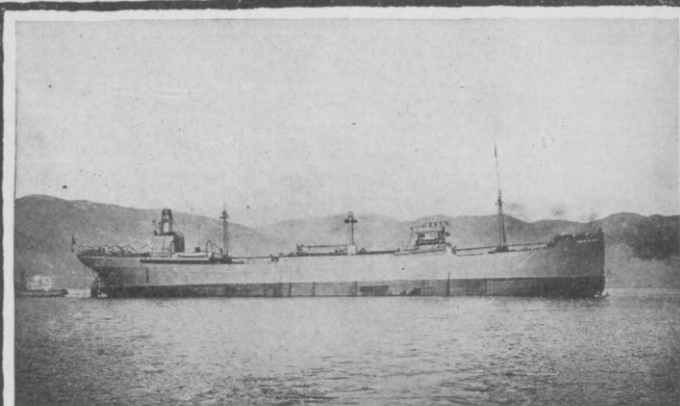
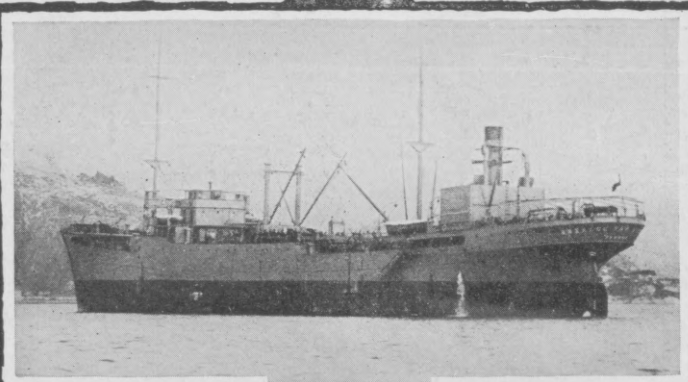
THE Asiatic Petroleum Company also supply Kerosene Oil for use in the smaller Internal-combustion Engines and are prepared to supply Petroleum Spirits, Lubricating Oils, Wax and Greases in all Far Eastern Markets.

## THE ASIATIC PETROLEUM CO., LTD.

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## MERCHANT SHIPS

### With Fiat Diesel Engines

Adriana . . . . .	6,700 tons d.w.
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Augustella . . . . .	3,500 tons d.w.
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FIAT Diesel-powered 8,100 tons cargo motorships "Ansaldo-San Giorgio I," "Ansaldo-San Giorgio II" and "Ansaldo-San Giorgio III."

THESE three 8,100 tons standard FIAT Diesel Engine Motorships have together covered over 500,000 miles with splendid reliability. Such a fine performance indicates the quality of FIAT productions.

# FIAT

STABILIMENTO GRANDI MOTORI  
FORMERLY THE FIAT-SAN GIORGIO

OIL ENGINE DEPARTMENT

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TELEGRAPHIC ADDRESS  
MOTORFIAT, TORINO, ITALY

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## GEARED MARINE OIL ENGINES

deliver

### Large Power Output

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### Low Speed

yet their cylinder diameters are small.

Propeller speed, being practically independent of price, can be selected for reasons dependent wholly upon economical and operative considerations.

Engine Reserve in a Single Screw Ship just as in a Twin Screw Ship.

## THE FALK CORPORATION

MILWAUKEE

*Manufacturers of*

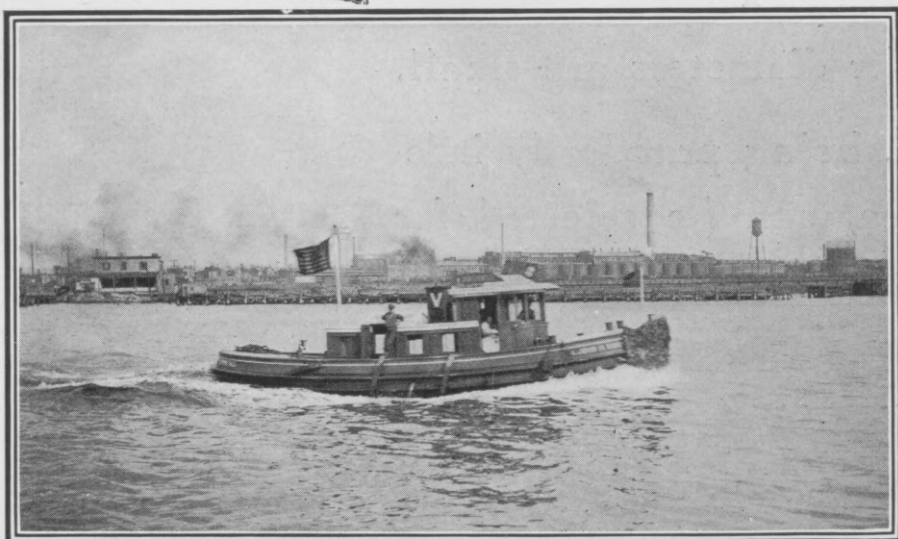
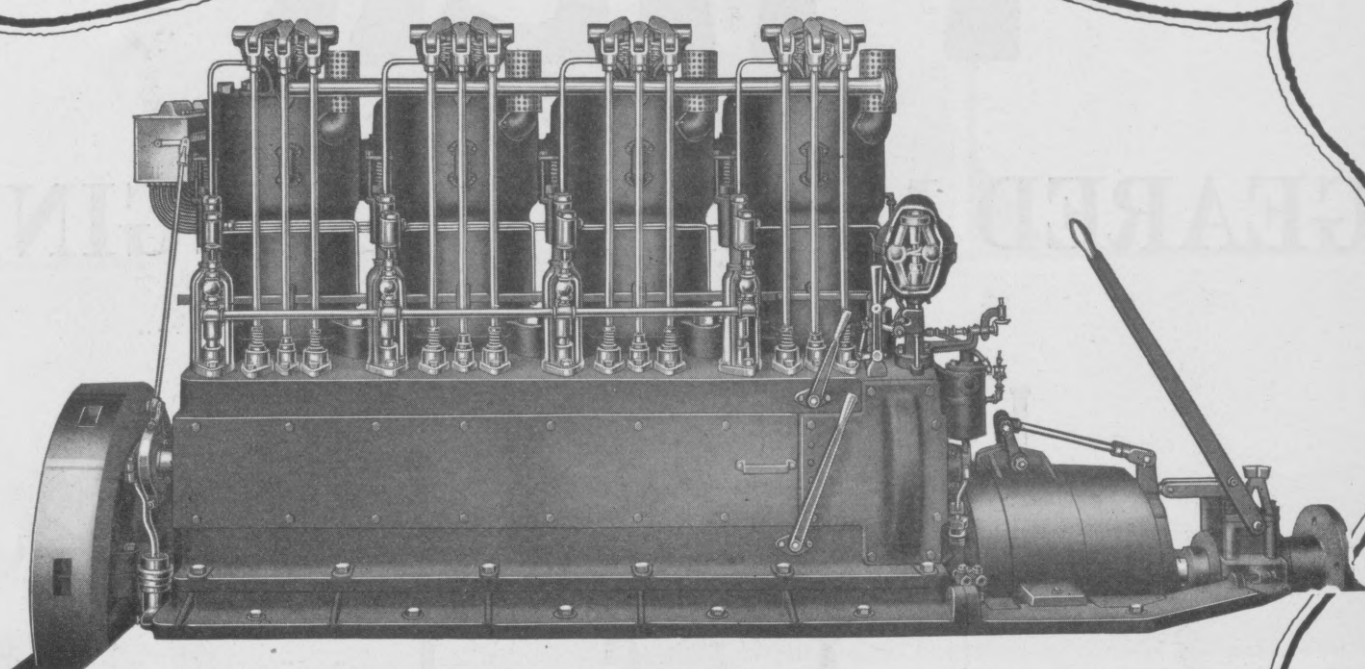
**Falk Herringbone Gears**

**Falk-Bibby Flexible Couplings**

**Falk Acid Open Hearth Steel Castings**



# WOLVERINE



## CRUDE OIL MARINE ENGINES

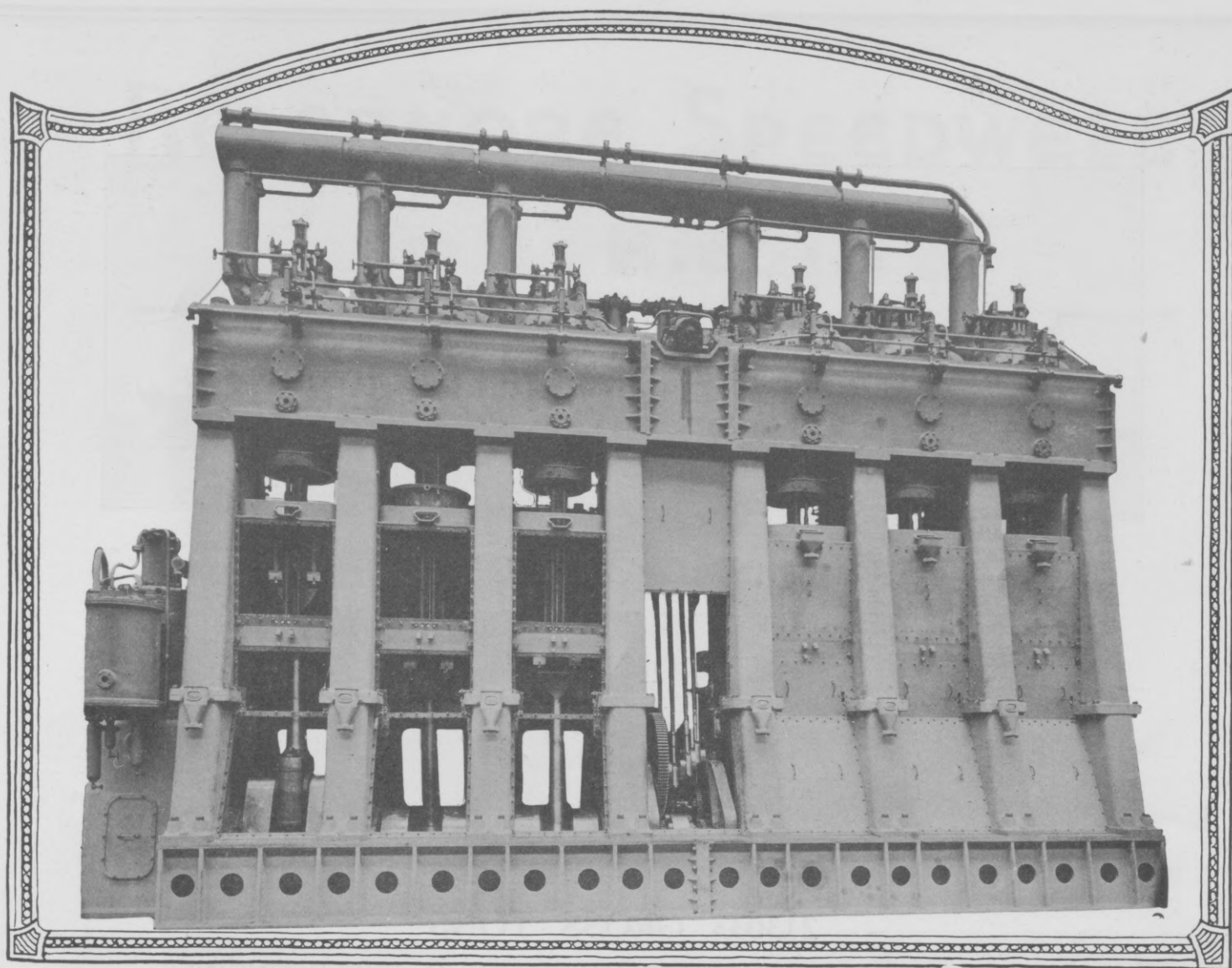
THE Oil Engine Tug, "John H. Van Pelt," a 45' 6" x 13' tug operated out of Elizabethport, N. J., is powered with a four-cylinder 95 H.P. WOLVERINE Crude Oil Engine, and her owner reports he has received splendidly efficient service from this engine at a remarkably low operating and maintenance cost. WOLVERINE Crude Oil Engines are produced in sizes ranging from 23 H.P. up to 150 H.P. Write for catalog No. 155.

### WOLVERINE MOTOR WORKS

24 UNION AVENUE

BRIDGEPORT, CONNECTICUT

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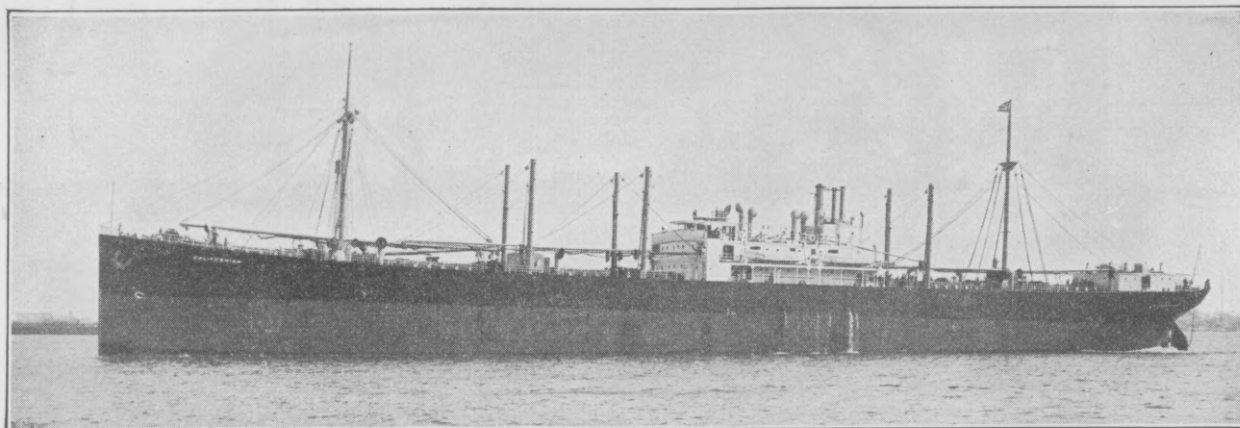


4 Cycle                  6 Cylinder  
Diesel Engine  
of the Motorship "Ashbee"  
2000 I.H.P.

This vessel of 5500 tons D.W.  
on her first voyage of 8740  
miles averaged 10.22 knots per  
hour on 6.92 tons of fuel oil  
per day for all purposes.

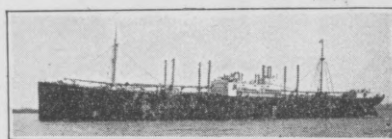
NEW YORK  
SHIPBUILDING CORPORATION  
Camden, New Jersey





**699082 GROSS TONS**

*Vessels Equipped With* **FOUR CYCLE BURMEISTER & WAIN ENGINES**  
By BURMEISTER & WAIN & LICENSEES



**213033 GROSS TONS**

*All Vessels Equipped With* **OTHER TYPES FOUR CYCLE ENGINES**



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*All Vessels Equipped With* **TWO CYCLE ENGINES**

The above shows the preponderance of the Burmeister & Wain System. Records are from Lloyd's of January 1, 1924, and for vessels of over 2000 gross tons and in actual service.

**THE WM. CRAMP & SONS S. & E. BLDG. CO.**

**PHILADELPHIA, PA., U. S. A.**

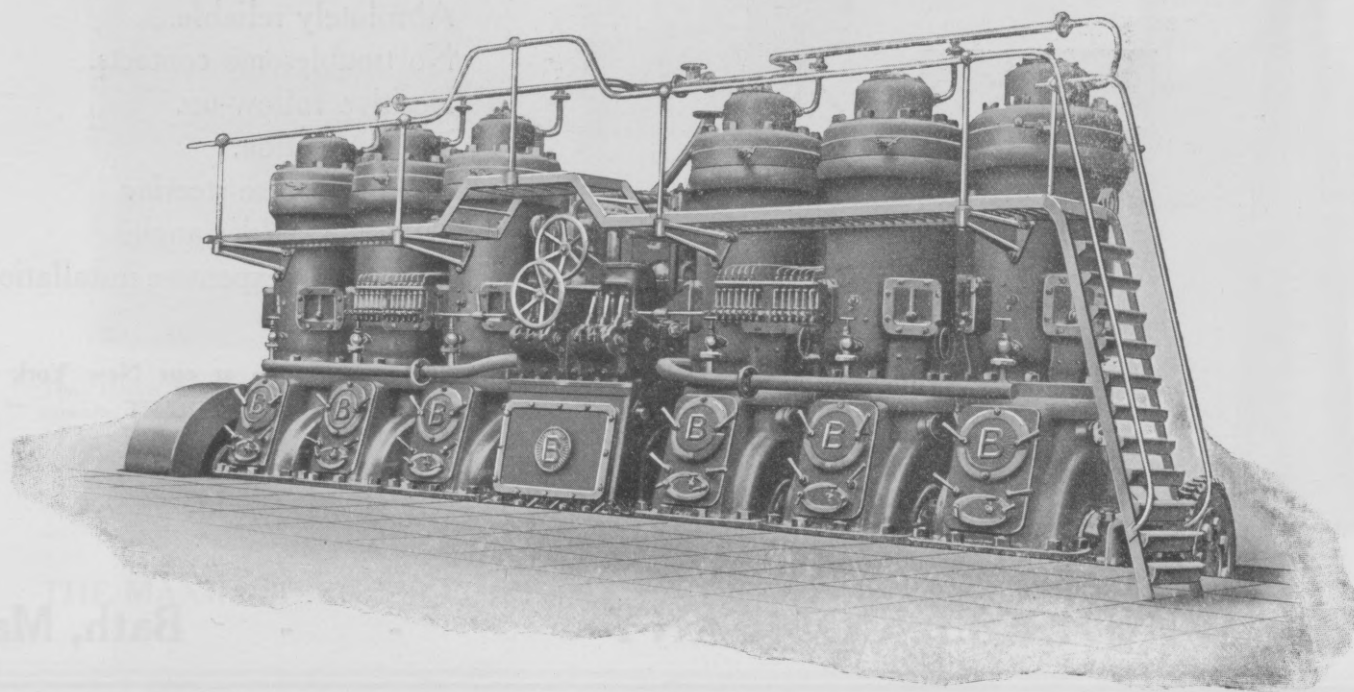
*Sole Builders of Burmeister & Wain Engines in America*

UNDER U. S. LICENSE

# BEARDMORE SPEEDWELL

(NEW TYPE)

## OIL ENGINE



This new type Beardmore Speedwell Oil Engine approximates in efficiency the Diesel Engine, but the design embodies the simplicity of the so-called Semi-Diesel type with greater accessibility and robustness (features which will be readily appreciated by the marine engineer). This new type oil engine is produced at a low first cost, and can be run by ordinary labour. A special combustion chamber permits the new type Beardmore Speedwell Oil Engine to run on even cheaper fuel oil than is used for the ordinary Diesel engine. It is easy to start and manoeuvre, no lamps for preliminary heating are required, i.e. (cold starting).

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Some idea of the comparative cost of running the new type Beardmore Speedwell Oil Engine is gained from the following:—With fuel oil at £3 per ton, running costs (including lubricating oil) of the Beardmore Speedwell Oil Engine works out at under .19 pence

per B. H. P. hour. With coal at £1 10s. per ton, the running costs (including lubricating oil) of an ordinary triple expansion steam set works out at about .385 pence per B. H. P. hour. This shows a saving in favour of the Oil Engine of 50 per cent.

WILLIAM  
**BEARDMORE**  
AND COMPANY LIMITED

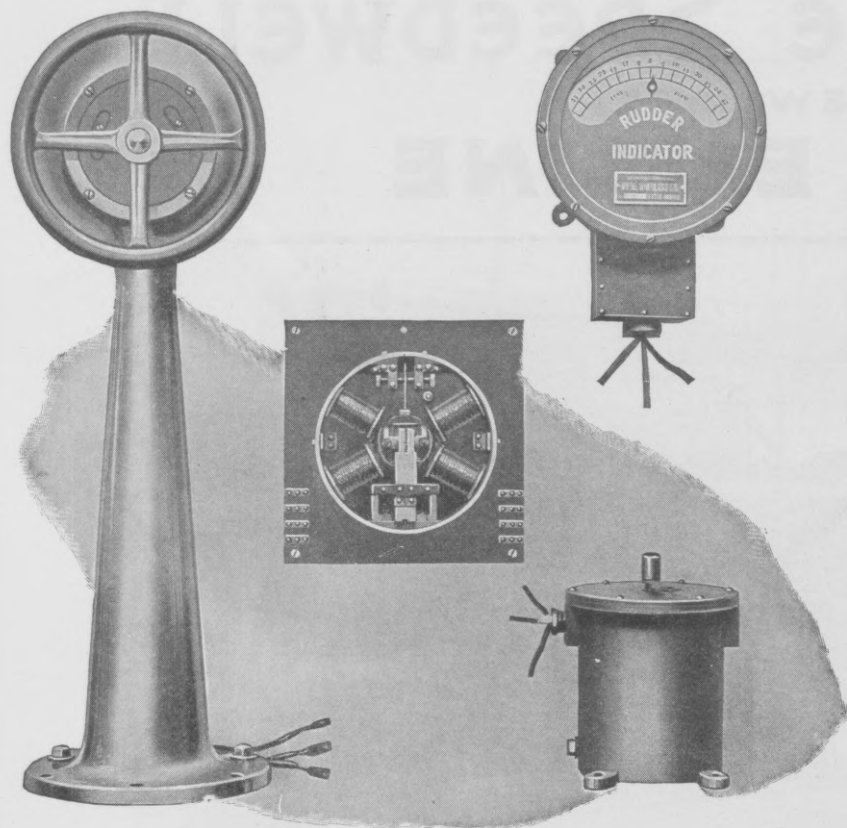
Works: Coatbridge, Scotland.  
Telegrams—Coatbridge.

London Office: 38, Victoria St., S. W. 1  
Telephone—360 Victoria. Telegrams—"Beardmore, Sowest, London."

All inquiries to be sent to Speedwell Works, Coatbridge



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### HYDE ELECTRIC TELEMOTOR AND RUDDER INDICATOR

Absolutely reliable.  
No troublesome contacts.  
Positive follow-up.  
No lost motion.  
Straight course steering.  
Accurate rudder angles.  
Easy and inexpensive installation.

Can be seen in operation at our New York Office,  
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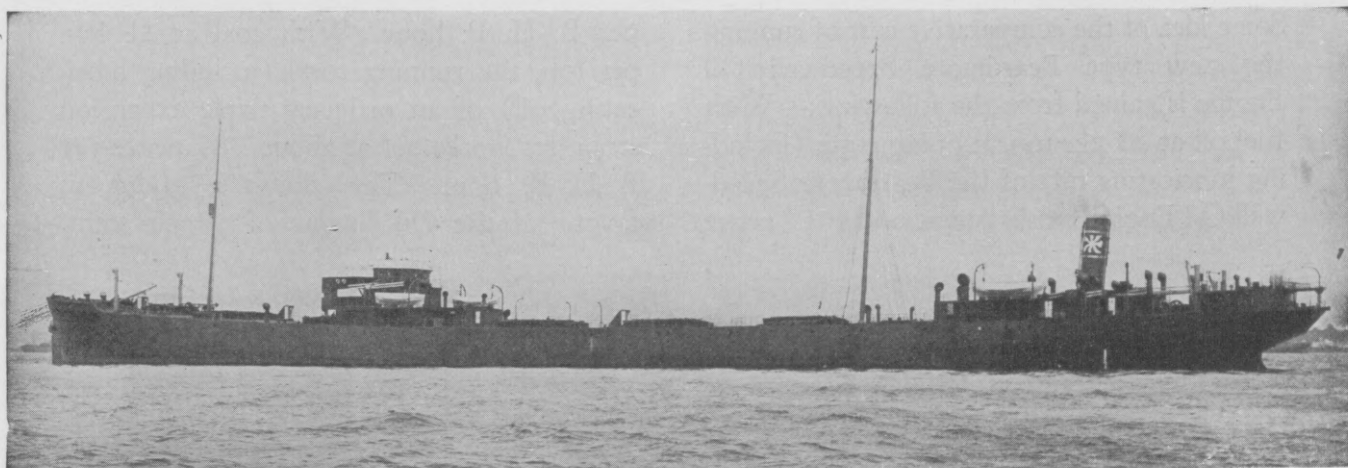
HYDE WINDLASS COMPANY

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## The Largest Motor Tank Ship in the World

Built on

### Isherwood System



M.S. "ZOPPOT"

Over 1400 vessels representing over 12,000,000 tons dead-weight-carrying-capacity, built, of which 660 are bulk-oil-carriers representing about 6,400,000 dead-weight-carrying-capacity tons; all built on Isherwood system.

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# THE MAXIM SILENCER

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The seven sister ships are similarly equipped.

This is ample proof of the quality of service rendered by Maxim Silencers. Where exhaust and suction noises must be efficiently eliminated, there is only one suitable Silencer.

*"Silence With Efficiency"*

**THE MAXIM SILENCER COMPANY, 107 Homestead Avenue, Hartford, Conn., U.S.A.**



## MR. ENGINEER!

Have you ever realized that the proper operation of the engines of your vessel depends chiefly on the quality of lubricating-oil used and its ability to provide and maintain that protecting film between the metallic surfaces so essential to efficient and economic service?

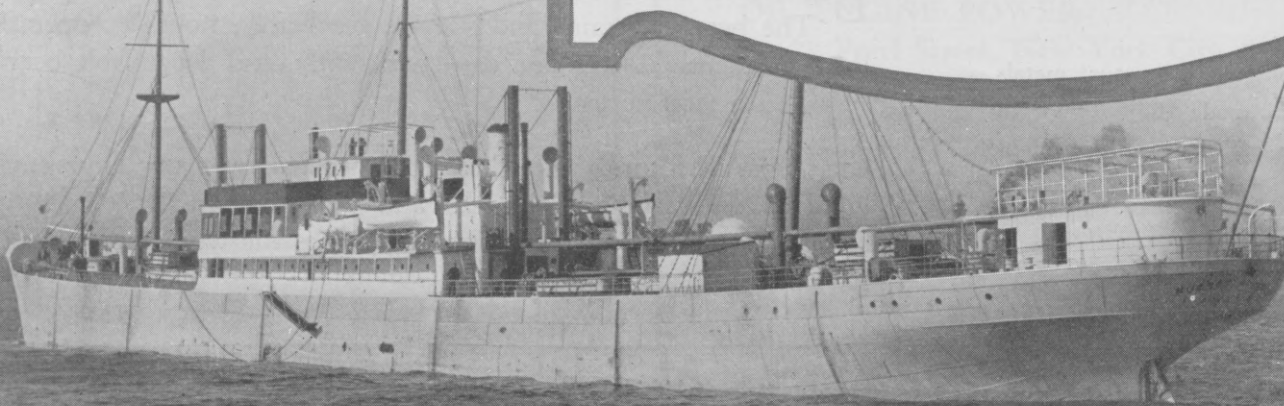
The slightest breakdown in your machinery during a voyage, due to the poor quality of lubricating-oil, with resultant delays and unnecessary repairs, will many times exceed the entire annual cost of lubrication.

### WICO DIESEL-ENGINE OILS

are of superior quality, provide every safeguard and guaranteed to reduce friction to a minimum.

Stocks carried at ALL West Indian, Central and South American Ports

**WEST INDIA OIL COMPANY**





# Saves Cargo Handling Time

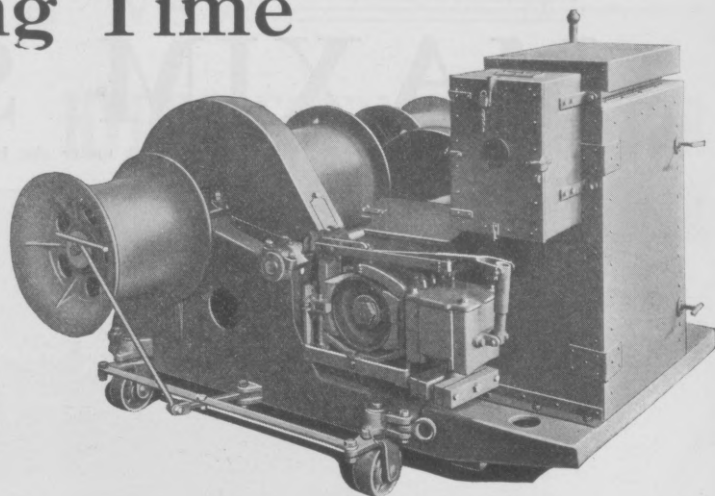
The A-E-CO Electric Portable Hoist shown speeds up the loading and unloading of cargo. It therefore lowers wharfage and stevedoring charges and, by reducing the ship's idle time in part, adds materially to its earning capacity.

It handles loads from 1,700 to 7,000 lbs. at a speed of 150 feet per minute. Yet it is remarkably efficient and economical of power.

It is portable. The entire equipment, including motor, resistance, controller and overload protection, is mounted on a single bedplate and can easily be moved by two men. It is unfailingly dependable and always ready to meet the most severe demands.

This is a popular member of the A-E-CO line of hoists and winches, which includes steam, electric, electro-hydraulic, gasoline and hand-operated types. Every cargo-handling requirement on ship or dock is met in this comprehensive line, which is backed by over sixty years' experience in the design and manufacture of ship machinery.

The new catalog—recently issued—gives descriptions and illustrations of the various types of A-E-CO Hoists and Winches. Every ship builder and ship-owner should have a copy. Write for yours—today!



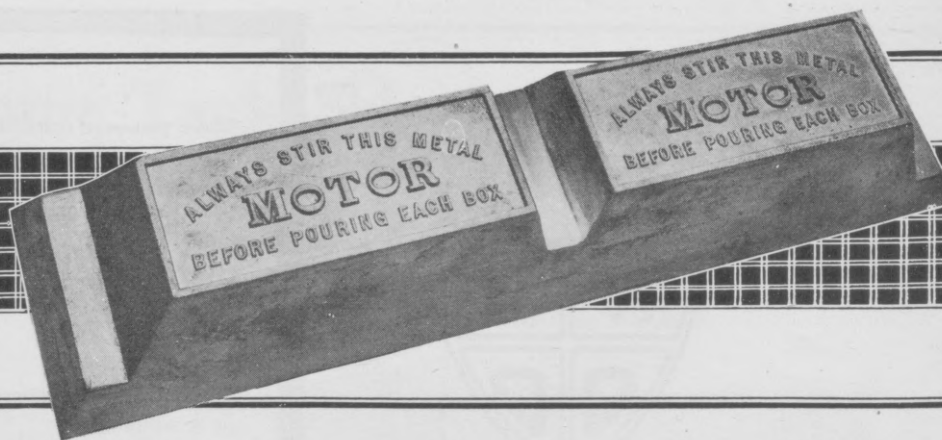
*The complete line of A. E. CO. Dependable Marine Auxiliaries includes Steerers, Telemotors, Windlasses, Winches, Hoists, Capstans, Gypsies, Towing Machines and Chandlery. Write for catalogs or special information about the auxiliaries in which you are interested*

## American Engineering Company

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Boston—New York—Philadelphia—New Orleans—Cleveland—San Francisco

# POST'S MOTOR MARINE METAL



We guarantee our metals to be made 100% of virgin raw materials of the highest grades at all times.

**B**EARING Metal for Oil Engines must have exceptional qualities. The bearing strains and stresses are heavy, hours of operation long, frequently 24 hours a day consistently, and dependable bearing service is a vital necessity.

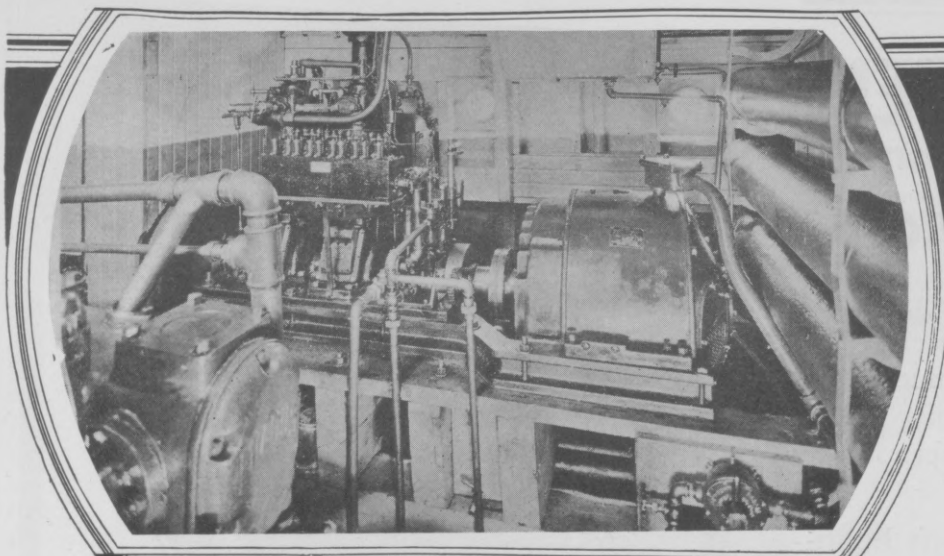
That Post's Motor Marine Metal is specified by many large engine builders, by leading Engineers and Naval Architects, is simply because this Bearing Metal dependably does the work required of it.



## E.L. Post & Company Inc.

50 CLIFF STREET NEW YORK CITY





# DIEHL

## DIEHL MARINE TYPE GENERATORS

A 9 K.W. Diehl Generator direct connected to a Mianus Oil Engine and used for supplying electricity aboard the Motor Yacht "Typee."

In addition to building High Class Marine Equipment we aim to give shipyards and operators better service. With one exception all the motors and generators on the eight Standard Oil Company's Diesel Barges were from the Diehl plant.

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ELIZABETH, N. J., U. S. A.

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By Foppl, Strombeck and Ebermann

Printed in German

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This book of 114 pages contains valuable and authentic information written by an authority, who is chief engineer of the Diesel-engine department of Sulzer Freres.

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# McNAB 'VISTA' SYSTEM

## Of Propeller Shaft Lubrication

PATENTED

### Assists Ship Conversion

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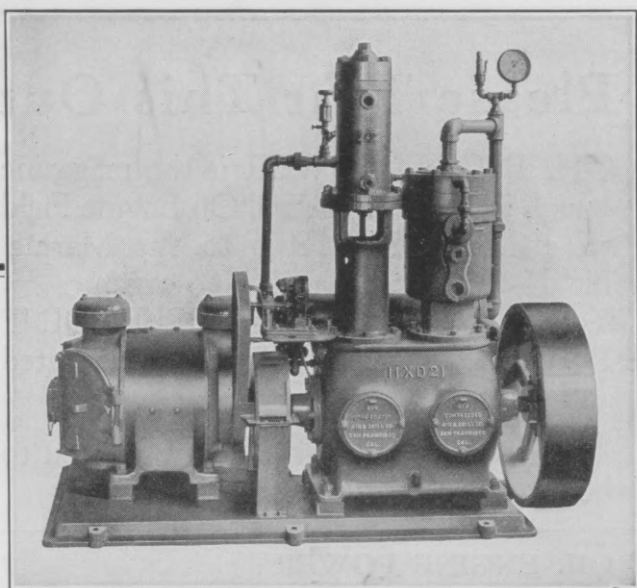
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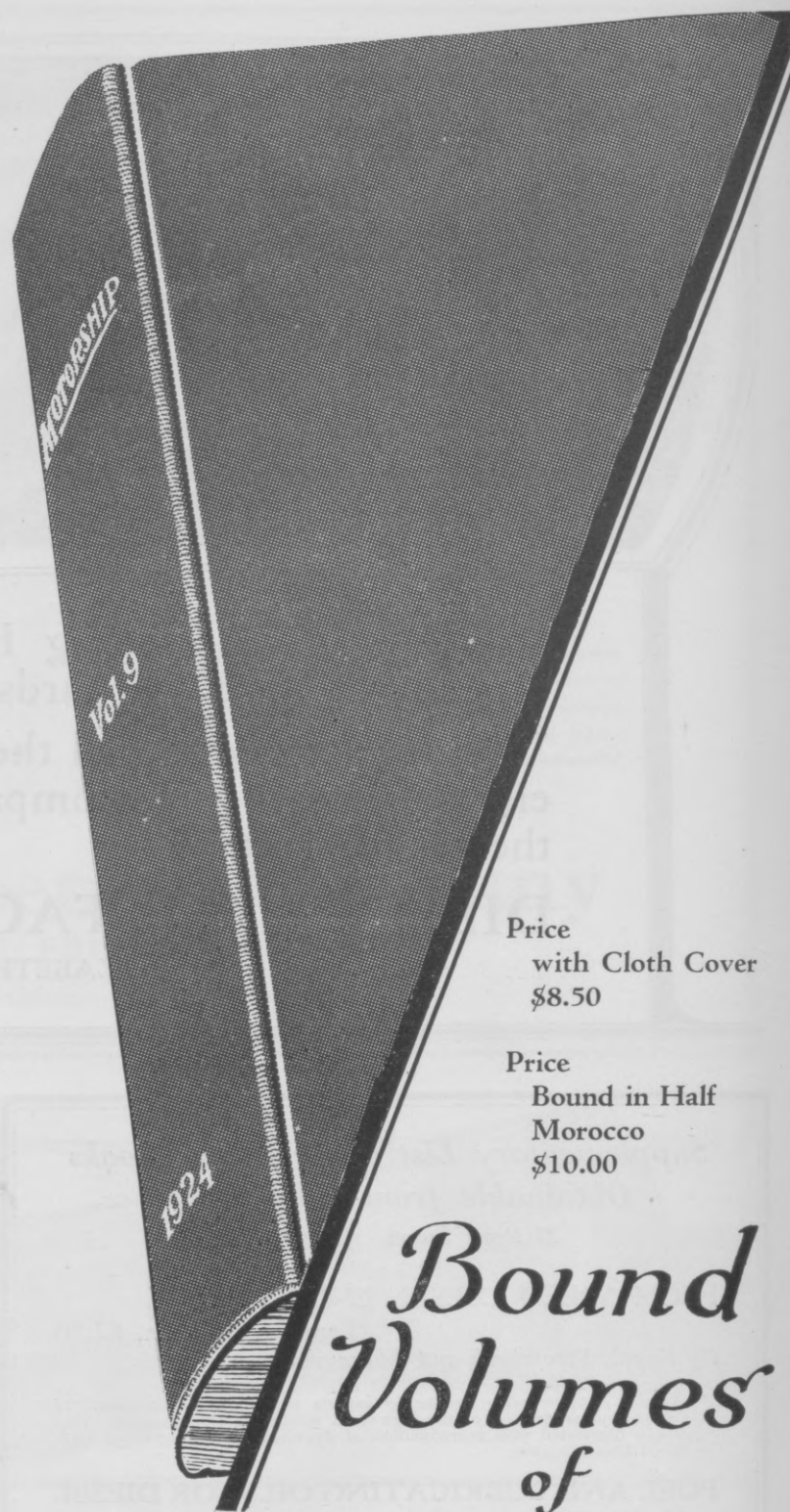
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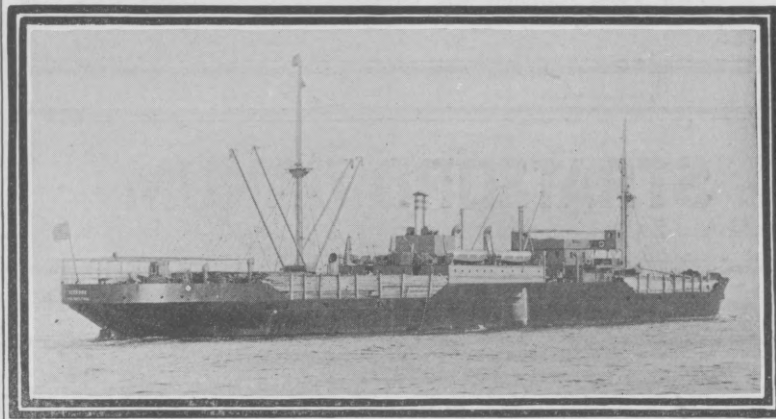
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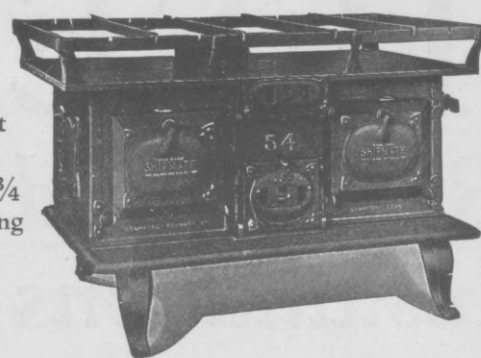
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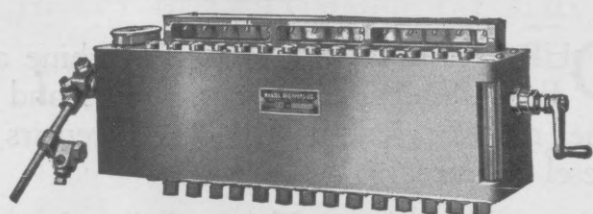
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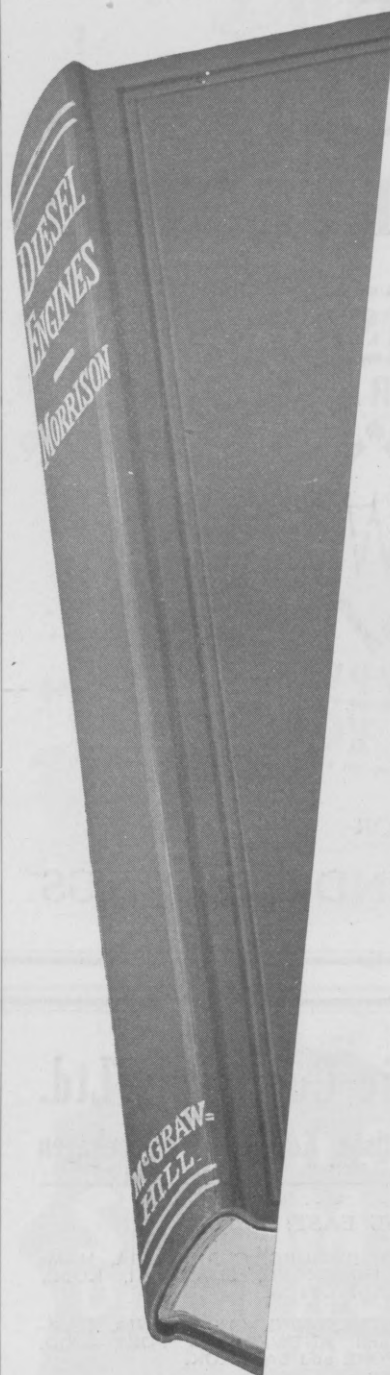
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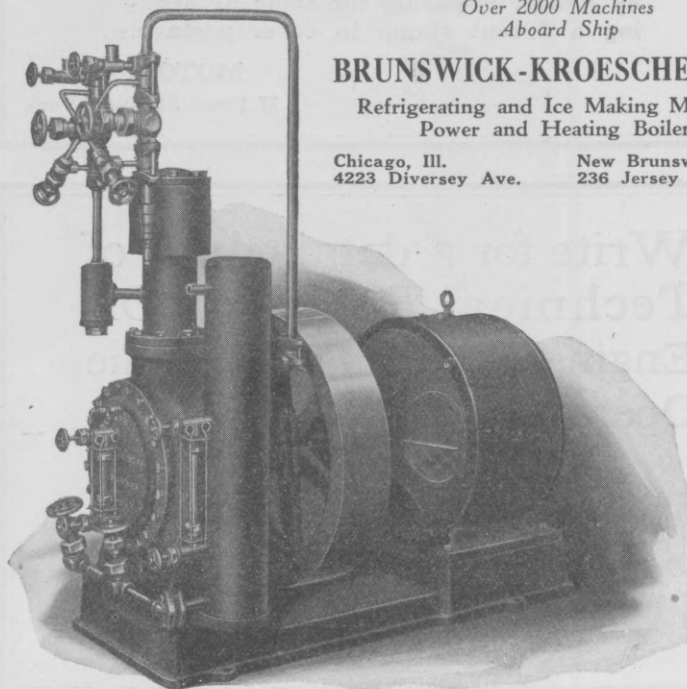
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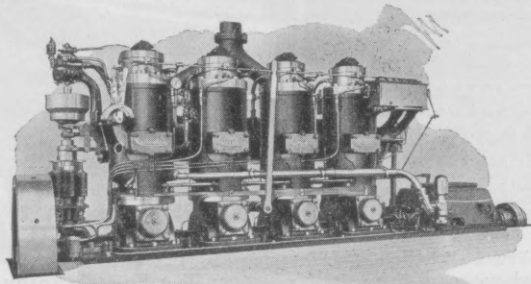
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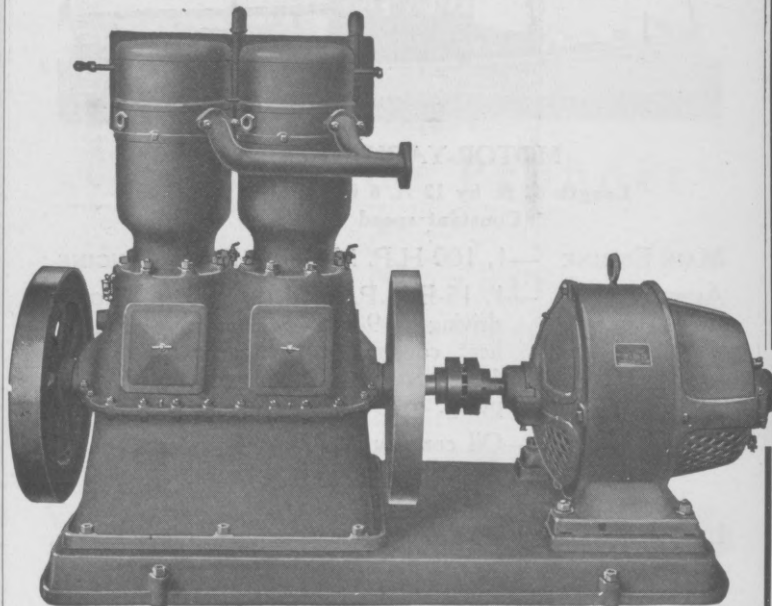
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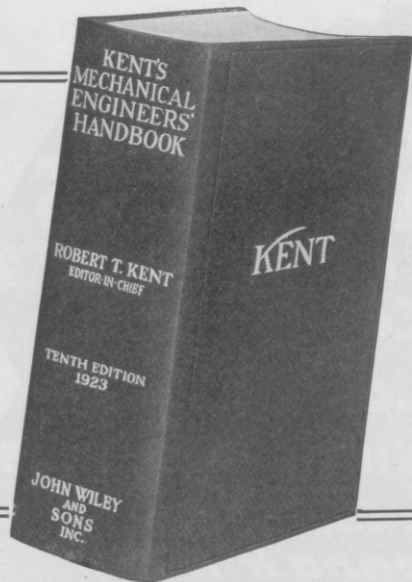
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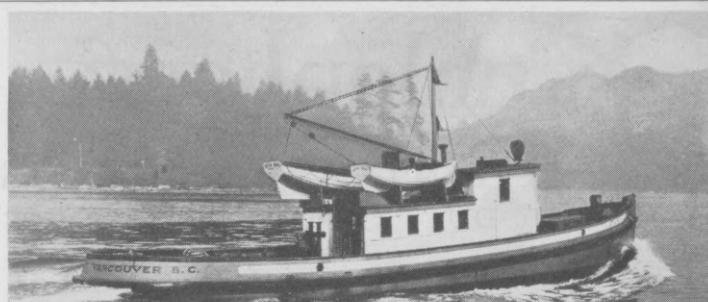
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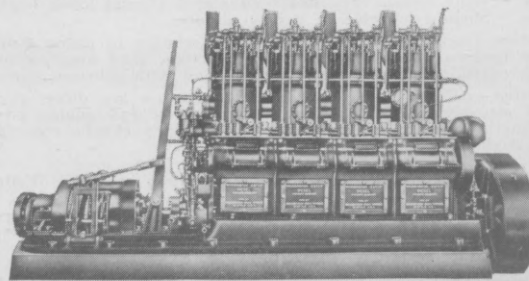


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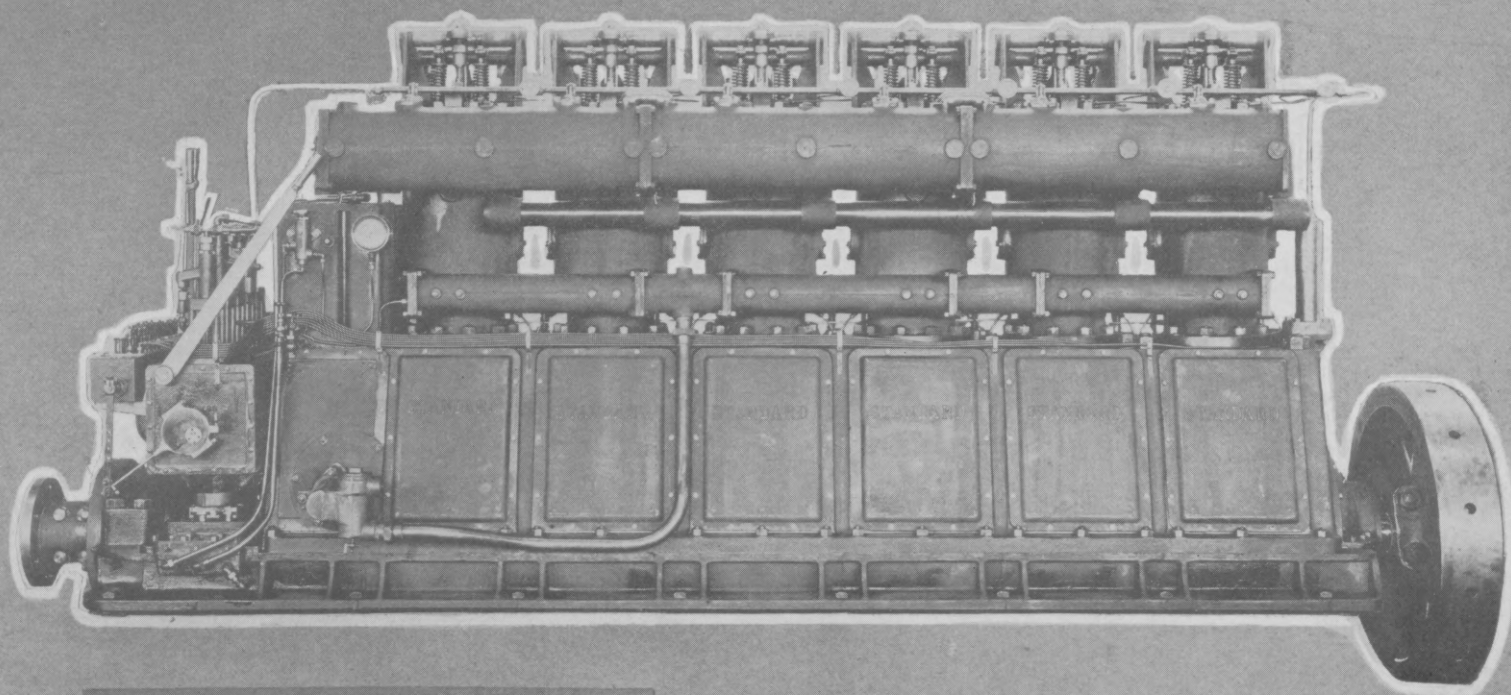
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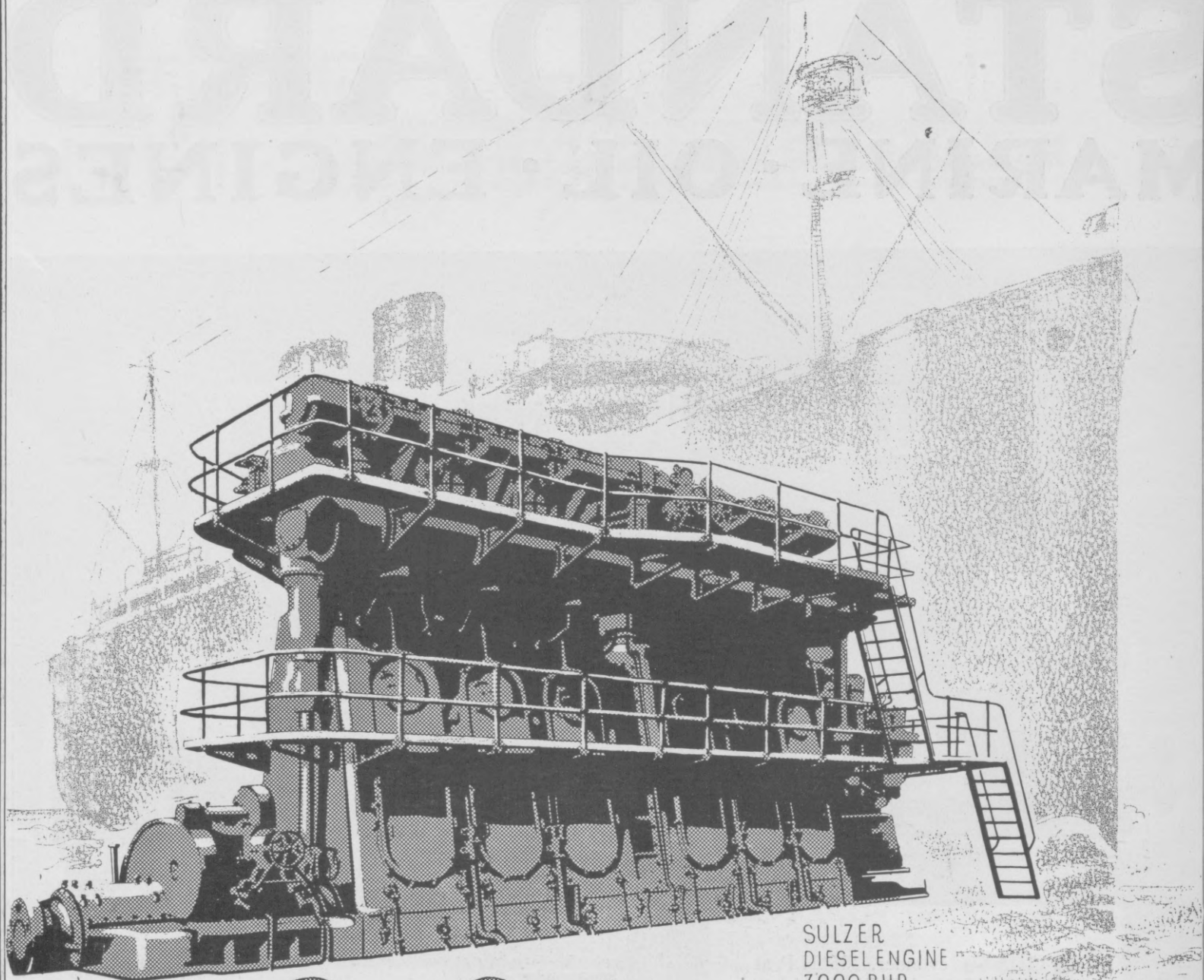
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**182 Whiton Street** **Jersey City, N.J.**





SULZER  
DIESEL ENGINE  
3000 B.H.P.

# *Sulzer*

## *Two-Cycle Marine Engines*

Large low-speed types from 1000 to over 6000 B.H.P.  
per unit for ships with one, two or more propellers, for ocean going  
vessels, such as cargo-boats, tankers, liners, yachts, etc.

**SULZER BROTHERS LTD**  
INCORPORATED IN SWITZERLAND, WINTERTHUR

**BUSCH-SULZER BROS.**  
DIESEL ENGINE CO., ST. LOUIS, MO.

# A Notable List of European Shipbuilders Licensed to Build Sulzer Marine Diesels

F. et C. de la Mediterranee, Havre, France.

Wm. Denny & Bros., Ltd., Dumbarton, Scotland.

Sir W. G. Armstrong, Whitworth & Co., Ltd., Newcastle-on-Tyne, England.

Alexander Stephens & Sons, Ltd., Glasgow, Scotland.

Wallsend Slipway & Engr'g Co., Ltd., Wallsend-on-Tyne, England.

The Koninklijke Maatschappij "De Schelde," Flushing, Holland.

The Northumberland Shipbuilding Co., Ltd., London, England.

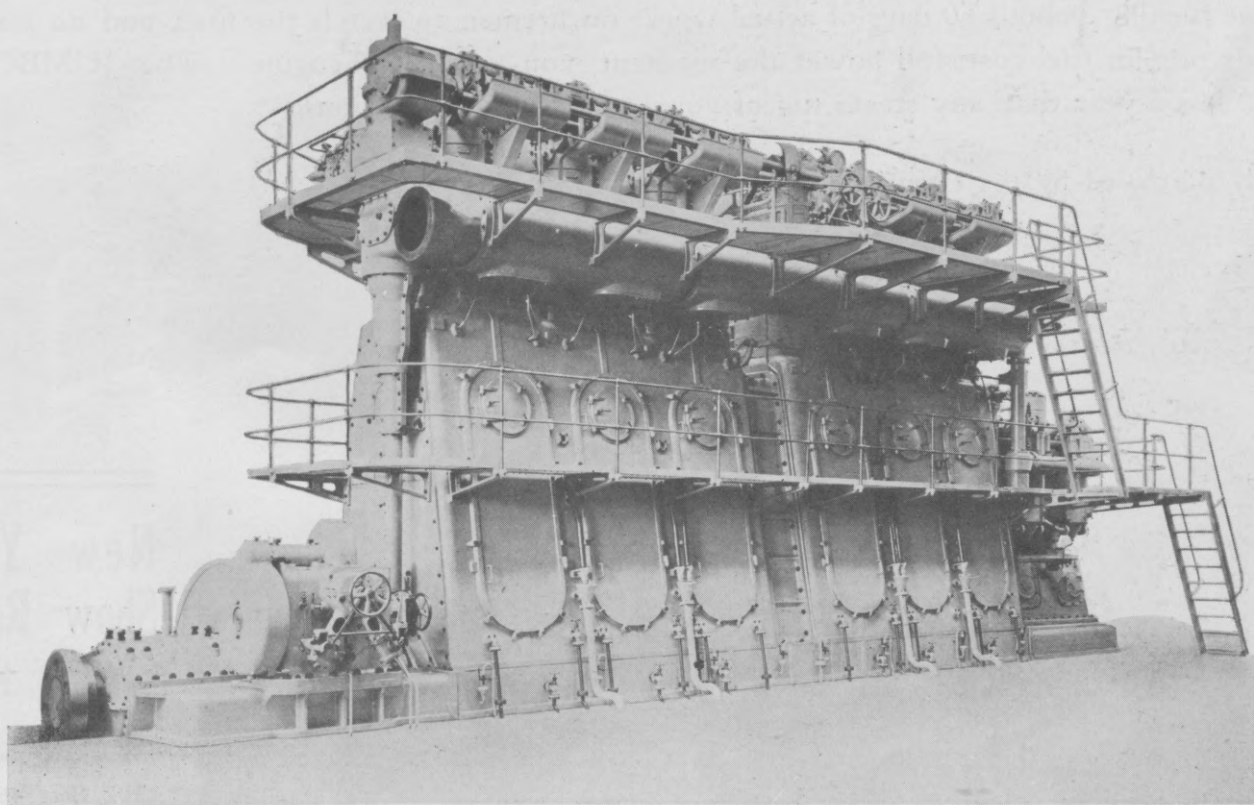
Fairfield Shipbuilding & Engineering Co., Ltd., Glasgow, Scotland.

Workman, Clark & Co., Ltd., Belfast, Ireland.

Thunes Mek Vaerksted, Christiania, Norway.

Howaldtswerke, Kiel, Germany.

Soc. Am. des Atejers et Chantiero de la Loire, St. Denis sur Siene, France.



**3000  
B.H.P.  
Sulzer  
Marine  
Diesel  
Engine**

The above concerns chose the Sulzer engine of proven design with the whole European field to select from. No other type of engine has been adopted by any such number of reputable companies. Sulzer Bros. are partners in our Company, and we build Diesels of the same type for American ships.

**BUSCH-SULZER BROS.-DIESEL ENGINE CO.**

60 BROADWAY, NEW YORK

ST. LOUIS, MO.

RIALTO BLDG., SAN FRANCISCO



866

Motorship

December, 1924

867

Motorship

December, 1924

# Nelseco

Established 1910—DIESEL ENGINES 230,000 Horsepower

See the Nelseco Engine at Port —Our New York Salesroom

## JUMBO, Largest Single Screw Tug, Powered by Nelseco

DURING the past decade the New London Ship & Engine Company has made a thorough study of the power problem of harbor and river craft. Today, the largest single screw Diesel towboat is driven by a Nelseco 600 B.H.P. direct reversible engine. The JUMBO is one of the most powerful, and yet most economical towboats in New York Harbor. What steam tug can offer these features? A cruising radius of 7000 miles on one fuelling—about 60 days of actual work; no firemen to watch the fires, and no stand-by losses; one-fifth your present fuel cost; full power the moment you start the engine. The JUMBO will operate for \$20,000 less a year than any steam tug of equal power and dimensions.

Recently purchased by the Cornell Steamboat Company of New York



**New York  
Show Rooms  
"PORT ELCO"**  
247 Park Ave.  
and  
107 East 46th St.



ENGINE ROOM OF "JUMBO" SHOWING 600 B.H.P. NELSECO DIESEL ENGINE

Demonstrations made on appointment in New York Harbor. Call Rector 0020

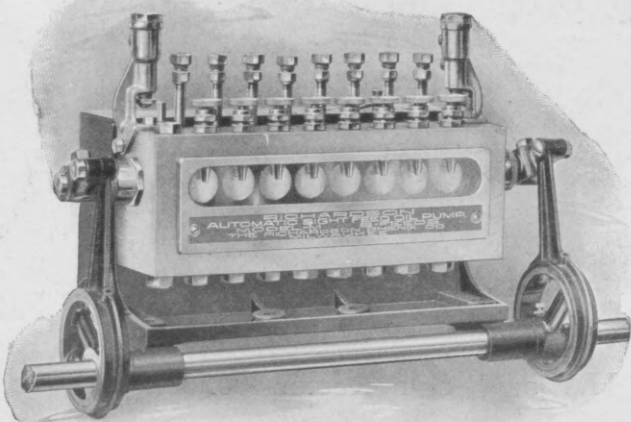
Write for Latest Bulletins

## THE NEW LONDON SHIP & ENGINE CO.

GROTON, CONNECTICUT



## Scientific Lubrication on a Converted Motorship



THE Muncove is one of the first Shipping Board vessels to be converted to a motorship. It is now powered with a 1200 S.H.P. McIntosh & Seymour marine Diesel engine, equipped with standard Bowser - Richardson - Phenix Model M Lubricators.

These lubricators assure dependable lubrication in exactly the right amounts to each individual cylinder. There are no if's or but's—the Richardson-Phenix lubrication puts the oil where it's needed when it's needed.

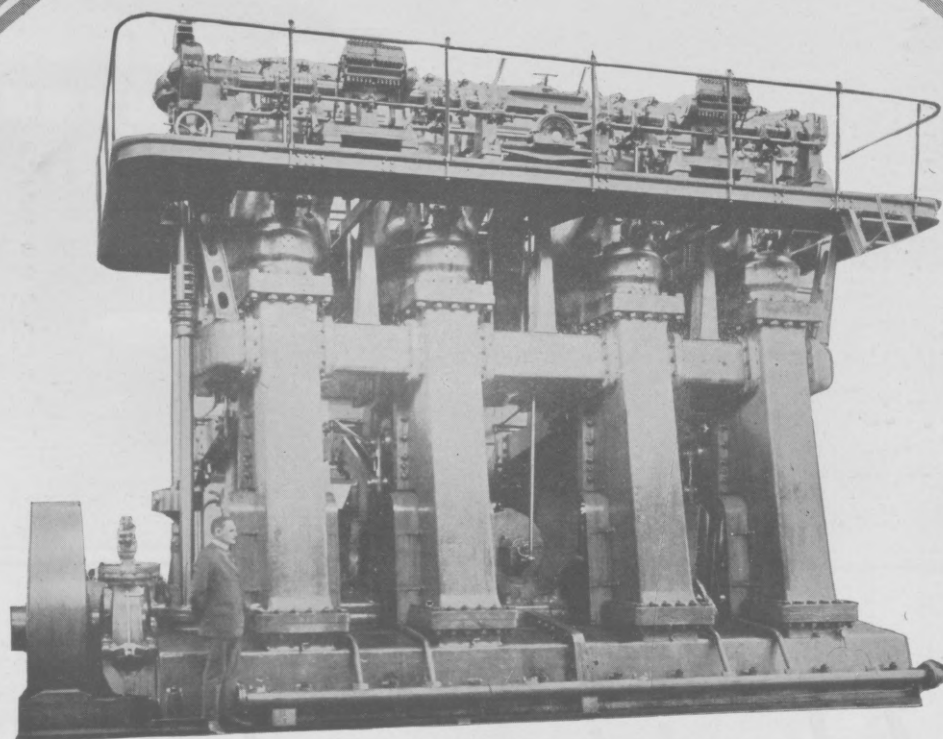
We have a special bulletin that describes these Model M lubricators, and we will be glad to send you a copy if you will address Dept. 21.

**S.F. BOWSER & COMPANY, Inc.**

LUBRICATION ENGINEERS AND MANUFACTURERS  
FORT WAYNE, INDIANA, U.S.A.

**LUBRICATORS-OIL FILTERS-OILING SYSTEMS-ACCESSORIES  
OIL STORAGE AND DISTRIBUTION SYSTEMS**





# NOBEL DIESEL

Nobel's 25 years' oil-engine experience includes passenger, freighter, tanker, tug, yacht, gunboat, revenue cruiser, submarine, pipeline, flour-mill, pumping and central-station installations.

Our experience is available to some reputable American Company.

*High, Medium and Low Powers*

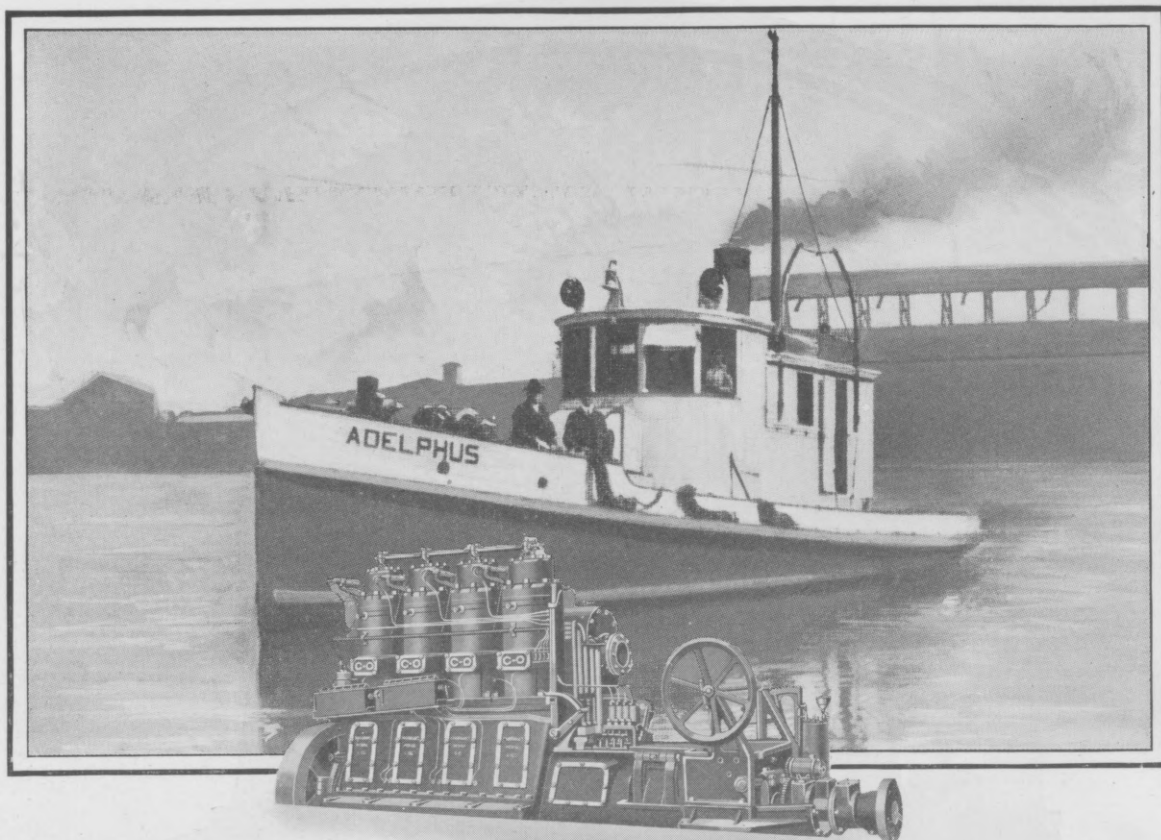
SWEDISH NOBEL DIESEL COMPANY  
NYNASHAMN SWEDEN

*Special U. S. Representative*

BORIS HAGELIN

43 Exchange Place, New York City Telephone, 9109 Hanover

# ENGINES



# *Proved best for work-boat use —* **2-cycle "C-O" Oil Engine**

Wherever work-boats run, you will find 2-cycle "C-O" engines at work on the hardest jobs.

The sturdy "C-O" does give super-dependability, year in and year out. The simple 2-cycle design is free from cams, valves, push rods, rocker arms and other trouble-making mechanism.

You have reliable power when you need it—to bring a cargo straight through for top market price—to get under way without loss of time or stand-by charges—to power your boat through fair weather and foul.

Use is the most convincing evidence of quality. Today, the trend of the trade is to 2-cycle design—pioneered by Fairbanks-Morse—**proved** best through more than a decade's use.

Fairbanks-Morse equipment can be serviced in all principal ports of call. Our engineers will be glad to give you full information.

**FAIRBANKS, MORSE & CO.**

Manufacturers

Chicago

28 branches throughout the United States, each with a service station

# **FAIRBANKS-MORSE** *Type "C-O" Oil Engines*



# A Test of Diesel Lubrication

## The "Silverelm's" unbroken oil film

**I**F you could have boarded the S.S. "Silverelm" as she docked at the end of her recent maiden voyage, you would have seen a beautiful specimen of modern Diesel engine design.

And you would have seen visible evidence of the correct lubrication of this latest Diesel construction.

Two days after the ship came to rest, this photograph of the piston was taken. It had not been touched. You can see proof of the perfect condition of the cylinder—no scoring—no broken film—even distribution of the oil—GARGOYLE D.T.E. OIL.

### Correct Lubrication with GARGOYLE D.T.E. OILS

These high-grade oils are of the correct body to meet all temperature and pressure conditions of Diesel engines. They assure minimum oxidation. Their immunity from contamination by impurities introduced by air, fuel and water are known to motorship engineers and owners throughout the world.

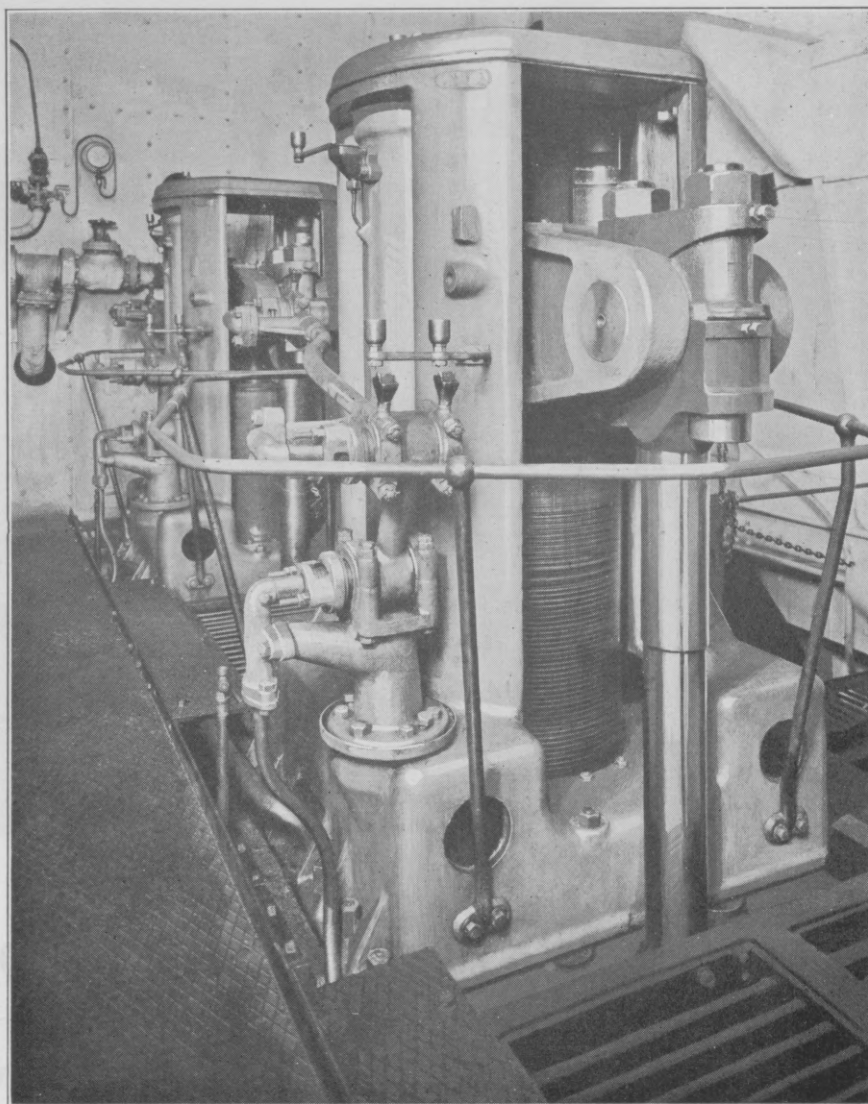
If you are not already using GARGOYLE D.T.E. OILS, we shall be glad to have an experienced representative confer with you on your lubricating problem, quote prices and arrange for deliveries.

Stocks of Gargoyle D.T.E. Oils may be secured at any one of 300 ports the world over. In writing, kindly address our New York office, at 61 Broadway.



## Marine Oils

*A grade for each type of service*



Diesel engine on S. S. "Silverelm"  
of the Kerr-Roosevelt Line—  
lubricated with GARGOYLE D.T.E. OILS

## Approved Practice in Diesel Engine Lubrication

### The Oils to Use

**For Power Cylinders:** GARGOYLE D.T.E. OIL EXTRA HEAVY—provides the proper body to form and maintain an oil film under the most severe conditions of Diesel engine operation.

**For Air Compressor Cylinders:** GARGOYLE D.T.E. OIL HEAVY X—successfully meets the conditions of high air pressures, high temperatures and moisture.

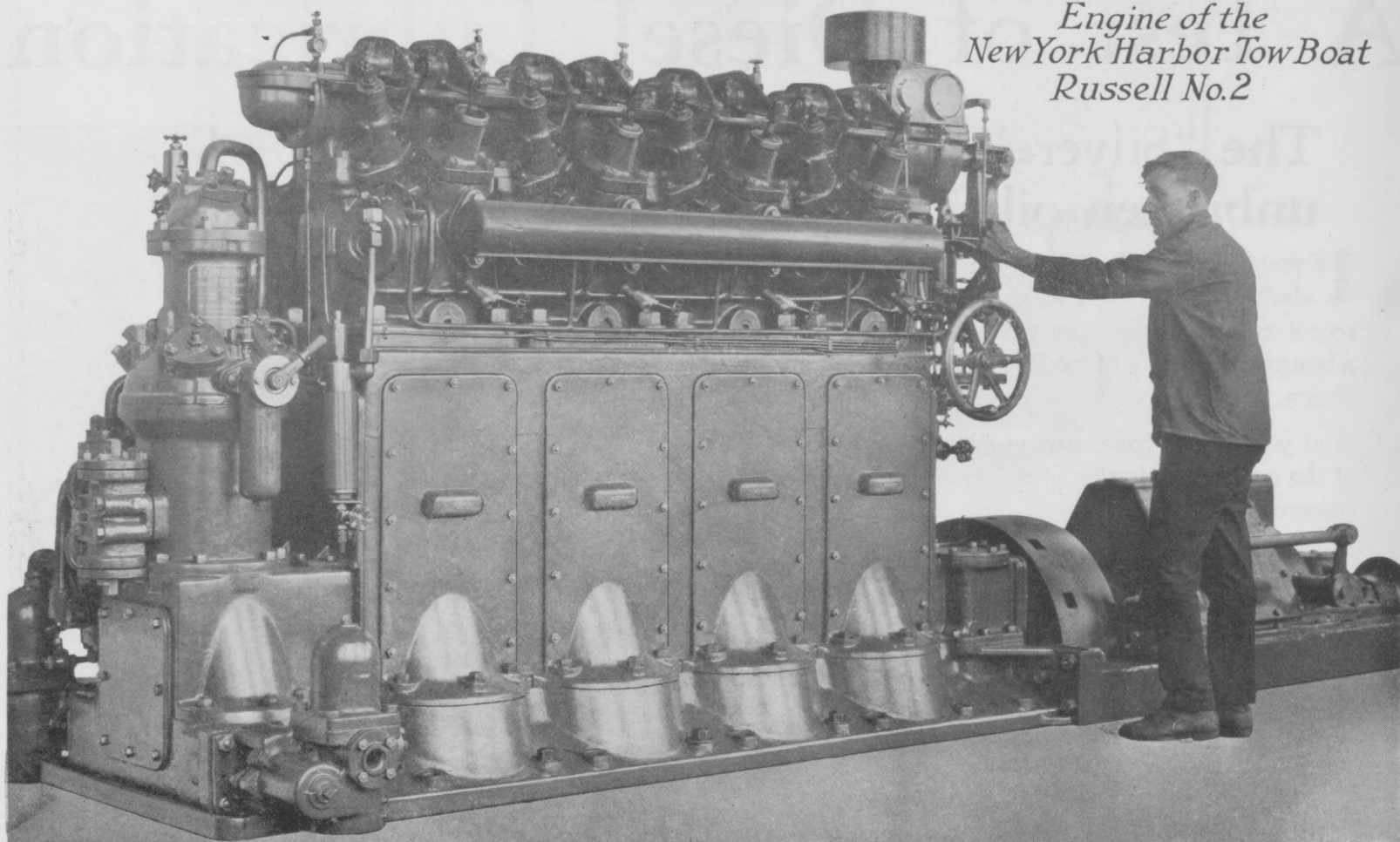
**For Bearings:** GARGOYLE D.T.E. OIL HEAVY MEDIUM—the oil is practically indestructible and will continue to furnish efficient and economical lubrication for long periods of time.

## VACUUM OIL COMPANY

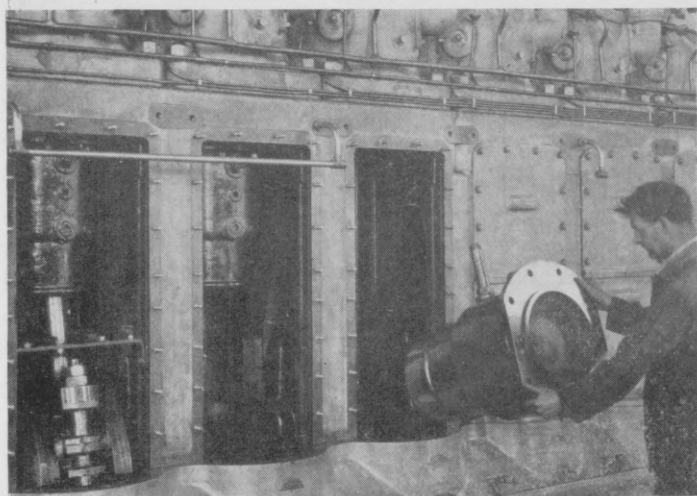
Specialists in the manufacture of  
high-grade lubricants for every class of machinery  
Obtainable everywhere in the world.

## NEW YORK, U.S.A.

*Engine of the  
New York Harbor Tow Boat  
Russell No.2*



## *A New Standard of Accessibility*



**A**LL working parts of LOMBARD ENGINES are designed for best results—minimum wear and longest life—and are designed and located for utmost facility of inspection and repair. The same standard is followed for small details as for major parts. This ease of access pays in added convenience and in saving of time and expense for maintenance.

*Send for Bulletin 21-SM*

THE LOMBARD GOVERNOR CO.  
ASHLAND, MASS.

# LOMBARD

*"Study the Structure"*

## DIESEL OIL ENGINES



# On the J.W. Van Dyke

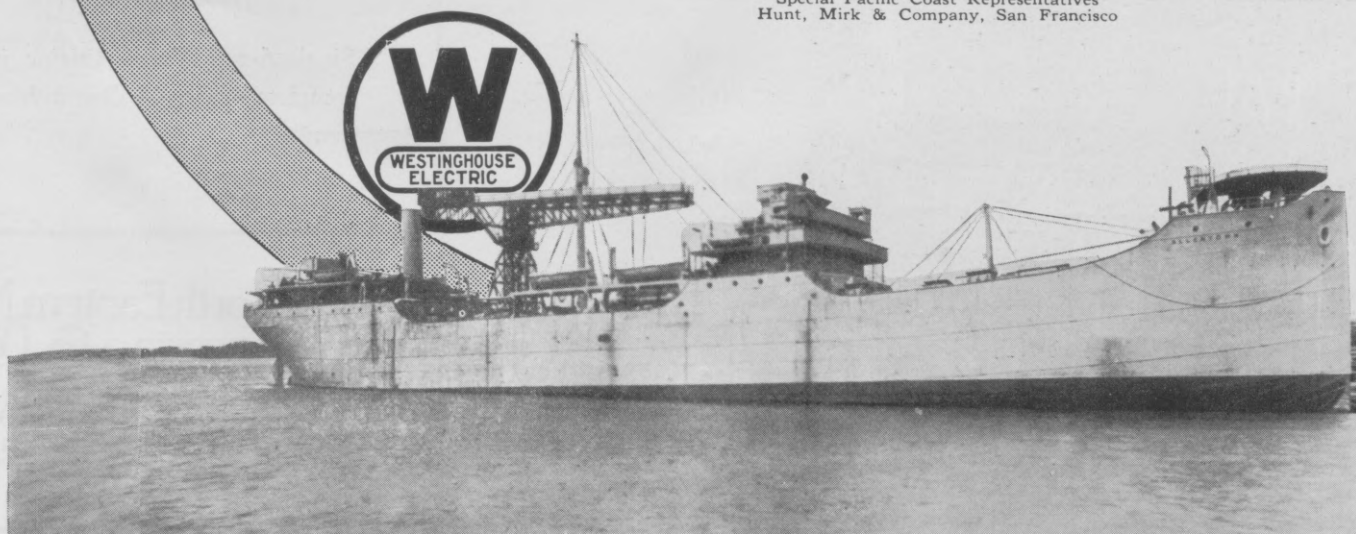
**W**ESTINGHOUSE electrical equipment has been selected by the Atlantic Refining Company for the conversion to Diesel-Electric drive of the 8000 ton tanker, *J. W. Van Dyke*, formerly the United States Shipping Board Ship, *Allentown*. This is the largest ship, in point of dead weight tonnage, yet under contract for conversion to Diesel-Electric drive.

Power for propulsion and auxiliaries will be supplied by three 600 kw. Diesel-driven Westinghouse generators with 50 kw. exciters. The single propelling motor is to be a 2300 shp., double armature Westinghouse motor, controlled directly from the pilot house by the Ward-Leonard system.

In port, one of the main generator sets is switched from the propelling circuit to the pump circuit, and supplies the pump motors, which handle the 60,000 barrels of oil. This illustrates the flexibility and economy of the Diesel-Electric System.

For conversion or construction, Westinghouse engineers will gladly cooperate with you to lay out the most efficient electrical equipment for your ship.

Westinghouse Electric & Manufacturing Company  
East Pittsburgh, Pennsylvania  
Sales Offices in Principal American Cities  
Service Stations in Principal American Ports  
Special Pacific Coast Representatives  
Hunt, Mirk & Company, San Francisco

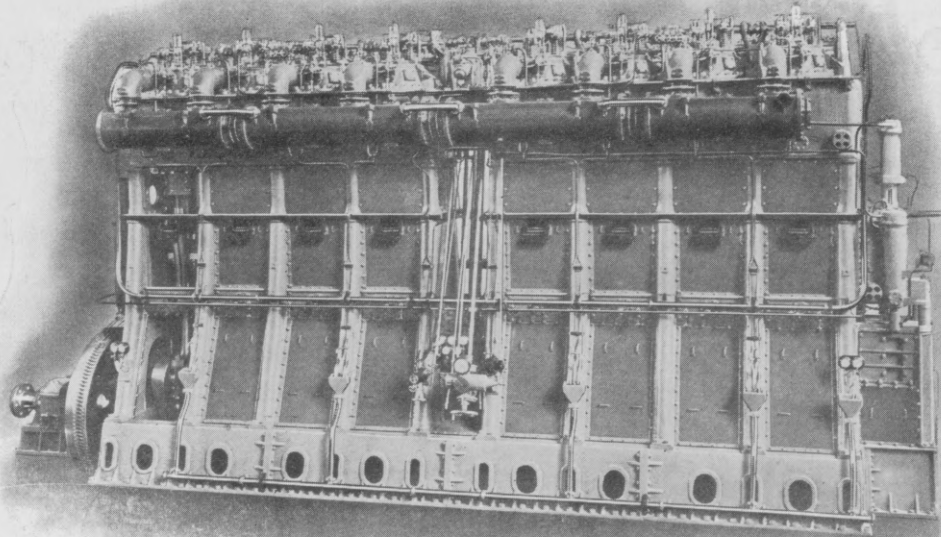


# Westinghouse

# "NORTH EASTERN" MARINE OIL ENGINES

Builders of Direct Double-  
Acting Diesel Engines up  
to 1000 H.P. per Crank

Single-Acting Diesel Engine just  
completed at our Wallsend Works

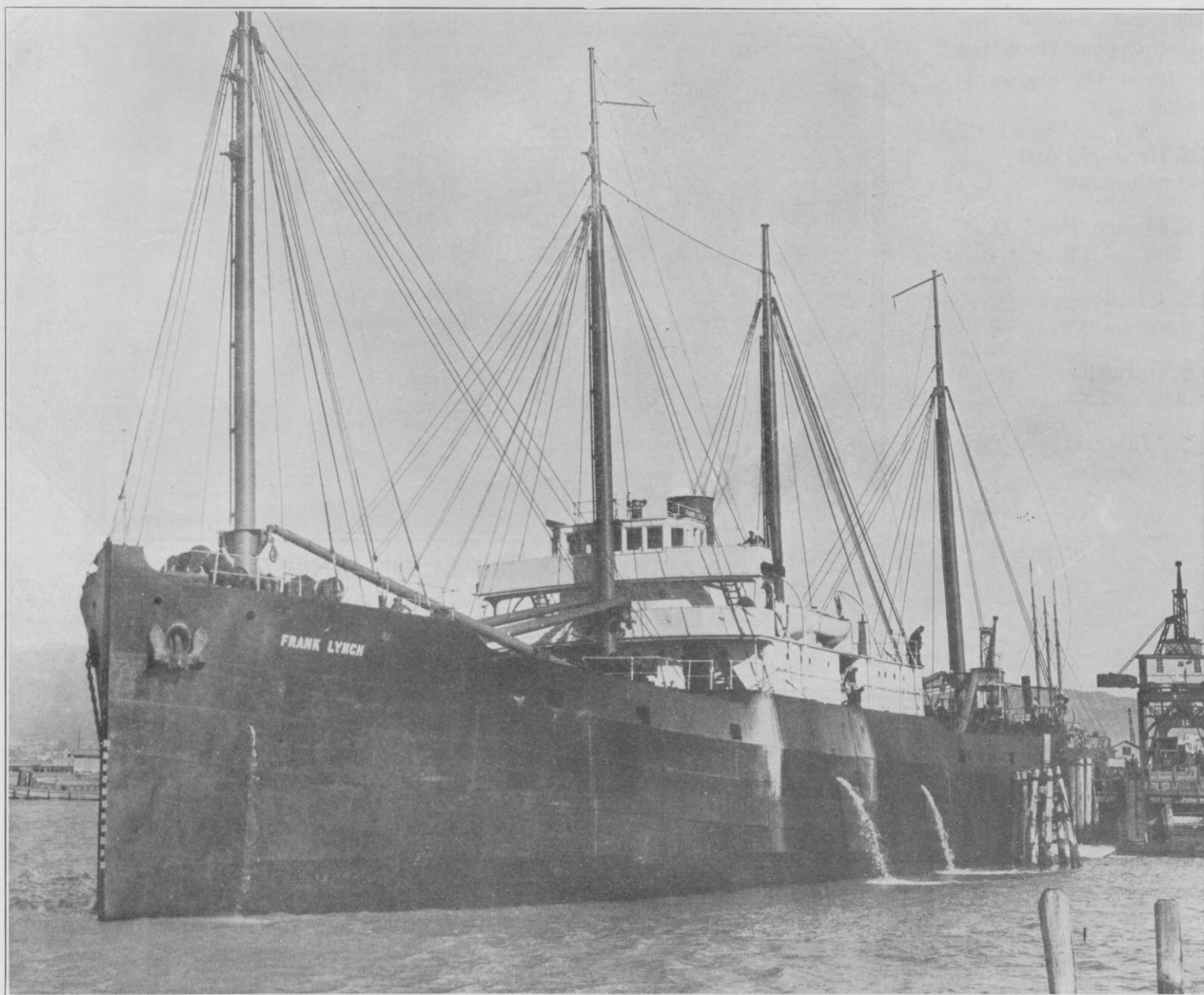


**The North Eastern Marine  
Engineering Co Limited**  
Wallsend - on - Tyne,  
Telegrams: - - - "News Wallsend"  
Telephones: - (Newcastle) City 104-5  
- Wallsend 126-127-128



# Mr. SHIPOWNER:

Note the saving in operating the motorship "FRANK LYNCH" illustrated below. This vessel was formerly steam driven but is now equipped with a PACIFIC-WERKSPOOR Diesel Engine



M/S "FRANK LYNCH," 3,100 D.W. Tons, equipped with one 1,150 I.H.P. PACIFIC-WERKSPOOR Diesel Engine

Fuel consumption before conversion.....120 barrels per day

Fuel consumption after conversion..... 39 barrels per day

**Saving in fuel oil per day . . . 81 barrels**

If the steam driven auxiliaries in this vessel were changed to Diesel-electric drive,  
an additional fuel oil saving of  $8\frac{1}{2}$  barrels per day would be obtained.

## Pacific Diesel Engine Company

OAKLAND, CALIFORNIA

# SUN SHIPBUILDING & DRY DOCK COMPANY

## DIESEL ENGINES



Shipyard and Main Office  
Chester, Pa.

Finance Building  
Philadelphia, Pa.

920 Cunard Building  
25 Broadway, New York City



Built and installed Sun-Doxford Opposed-Piston two cycle Diesel Oil Engines in the following:

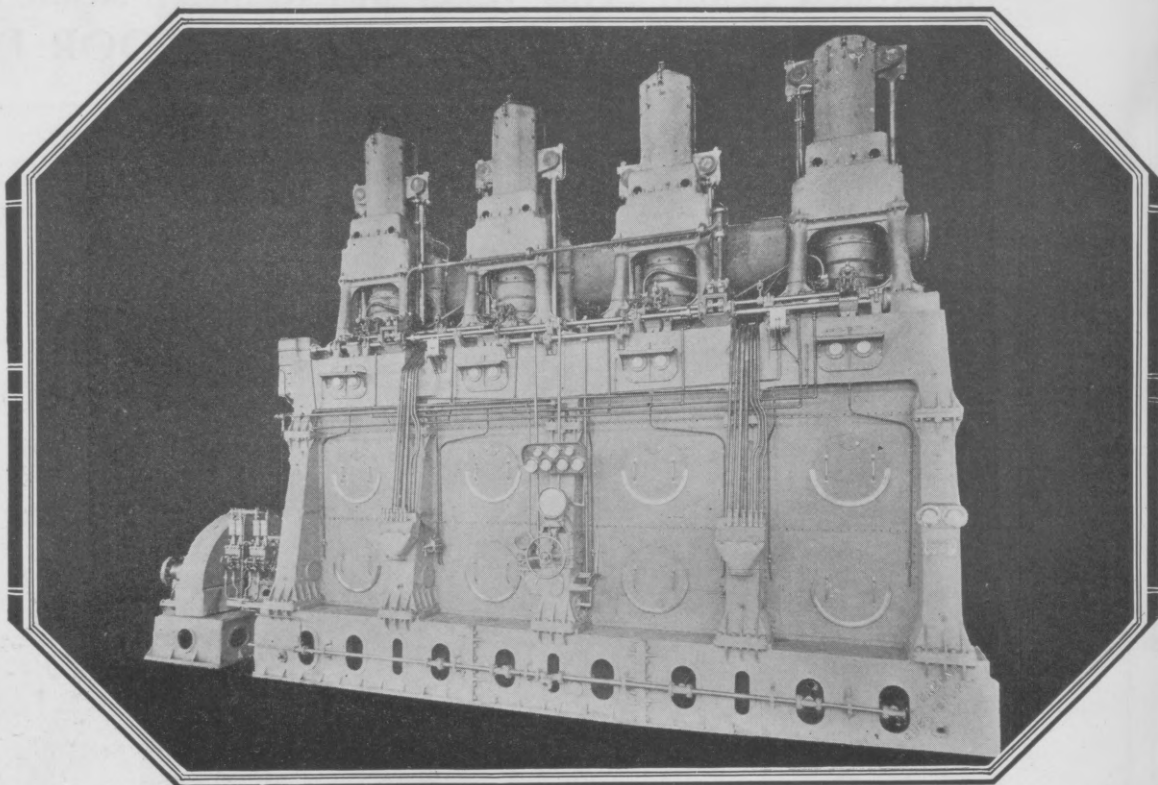
**M. S. Benson Ford**  
12,500 tons D.W.

**M. S. Henry Ford II**  
12,500 tons D.W.

**M. S. Challenger**  
11,600 tons D.W.

**M. S. Bidwell**  
10,250 tons D.W.

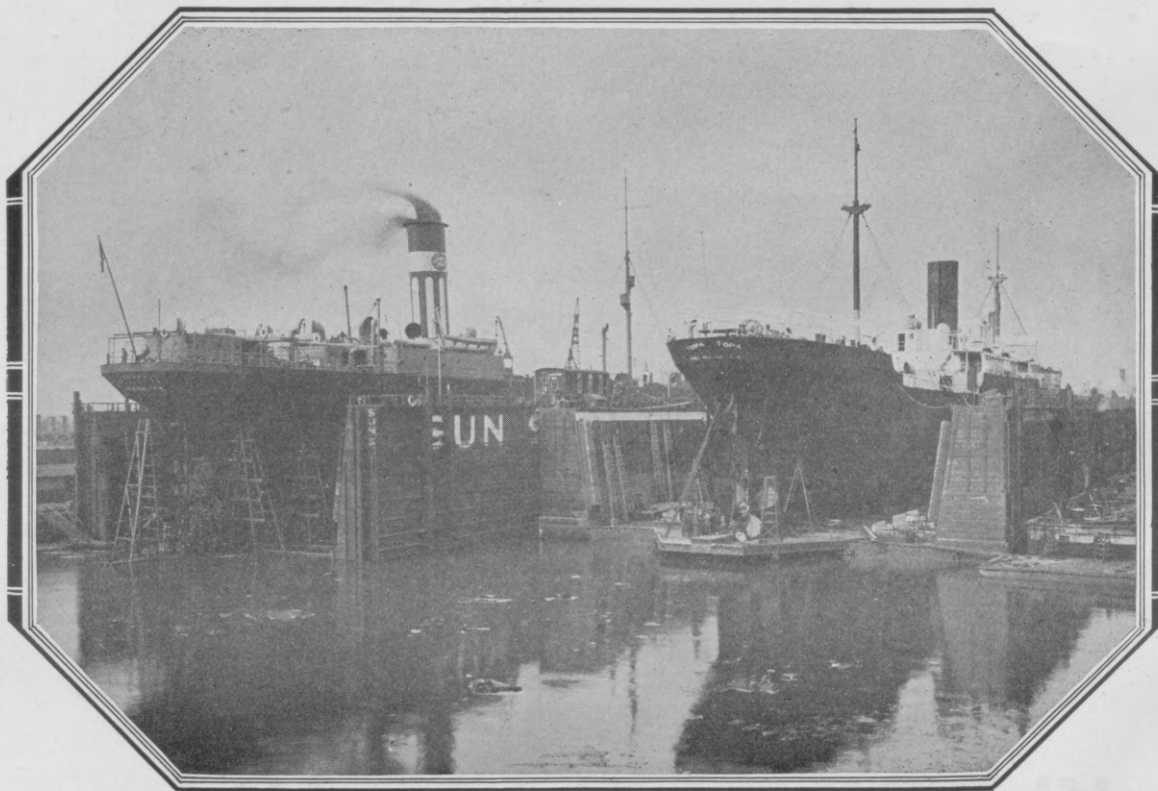
**M. S. Miller County**  
10,250 tons D.W.



**3000 B.H.P. at 90 R.P.M. ON SINGLE SCREW**

42,000 H.P. of Sun-Doxford Diesel Engines  
under construction for all purposes

**SUN-DOXFORD AND JUNKERS PATENTS**



**TWO FLOATING DRY DOCKS**  
**11,000 TONS LIFTING CAPACITY EACH**



# BOLINDERS

LOW PRESSURE—SURFACE IGNITION

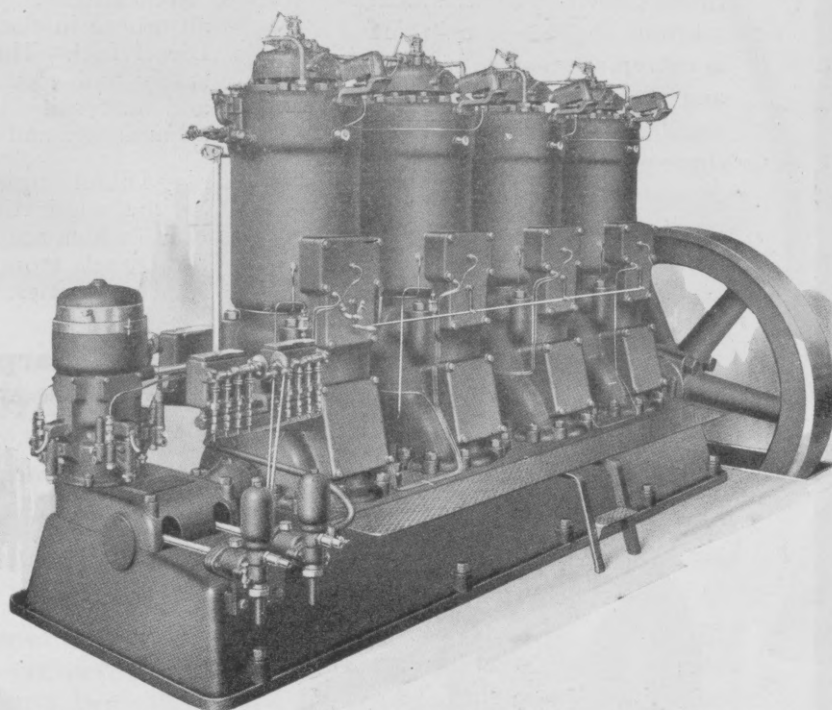
BO TYPE

SOLID INJECTION

## OIL ENGINES

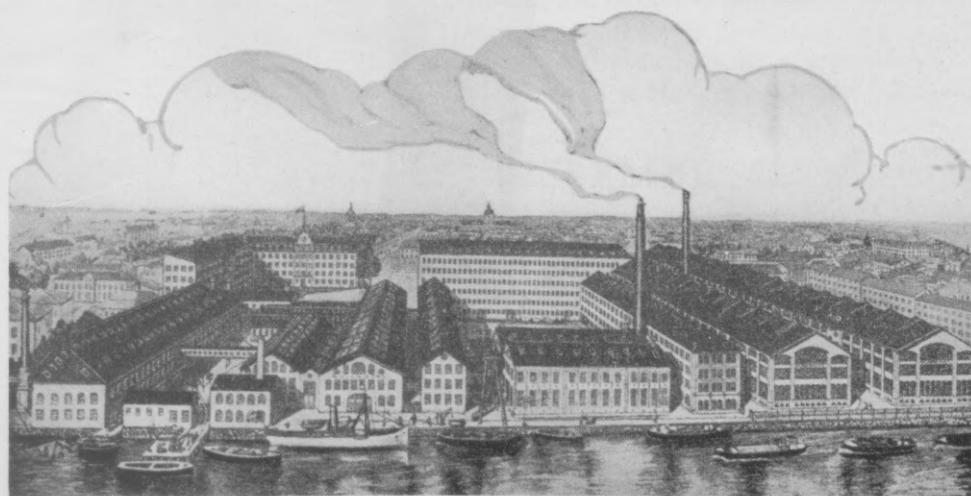
### *An Announcement*

The last word in fuel injection and self-governor control (from no load to full load), including noiseless, out-of-the-way, air intake valves, this new type Stationary BOLINDER is truly the ideal power plant for electric drive or auxiliary equipment on board ship, combining as it does the fuel economy of the two-cycle Diesel Engine with the simplicity of the Low Pressure, Semi-Diesel.



### SHORT SPECIFICATIONS

	Two-Cylinder Units			Four-Cylinder Units	
B. H. P. ....	120	150	200	300	400
R. P. M. ....	400	325	300	325	300
K. W. ....	80	100	135	200	270



Where the Bolinder Engines Are Made

**Bolinder's  
Company**  
INCORPORATED



**30 CHURCH ST.  
NEW YORK CITY**

# SHARPLES "PRESURTITE" SUPER CENTRIFUGE

## Special Diesel Fuels No Longer Required

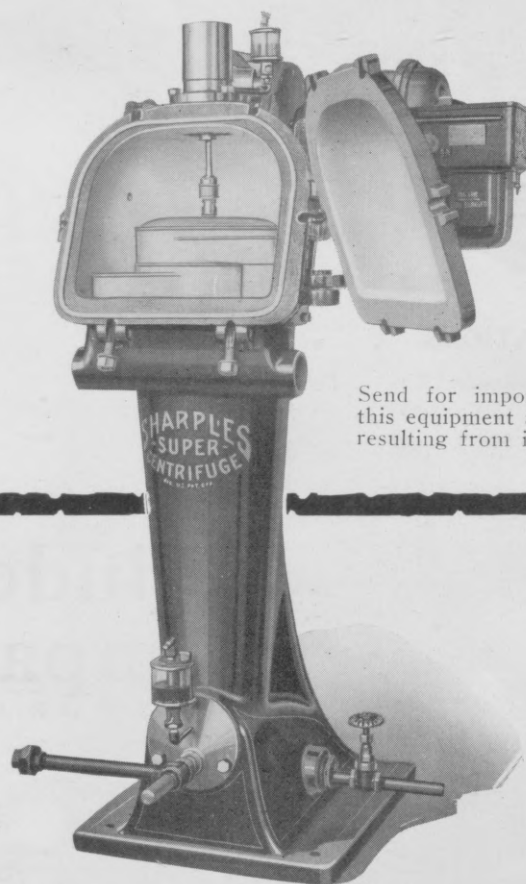
The Sharples "Presurtite" Super Centrifuge is the ideal machine for aboard ship. It is extremely easy to operate and occupies but a very small space. The simple three piece bowl weighs only 37 pounds and may be thoroughly cleaned by one man in five minutes. No effort, trouble or delays involved.

Motor ships equipped with the new Sharples "Presurtite" Super Centrifuge can buy their fuel anywhere in the world. They do not need special Diesel fuel. This new Sharples Super Centrifuge safely and economically purifies ordinary fuel oil and makes it fit for Diesel Engines by removing all moisture and suspended solid impurities.

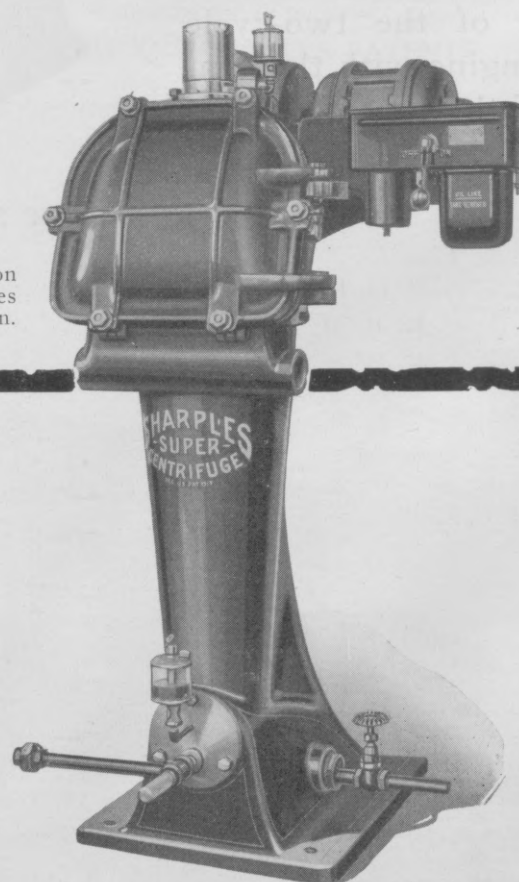
Any Diesel Engine fuel oil is considerably improved by the application of Sharples Super Centrifugal Force which automatically protects the cylinders of the Diesels from the danger of injecting water and solid impurities.

**The Sharples Specialty Company**  
2300-2336 Westmoreland Street  
Philadelphia, Pa.

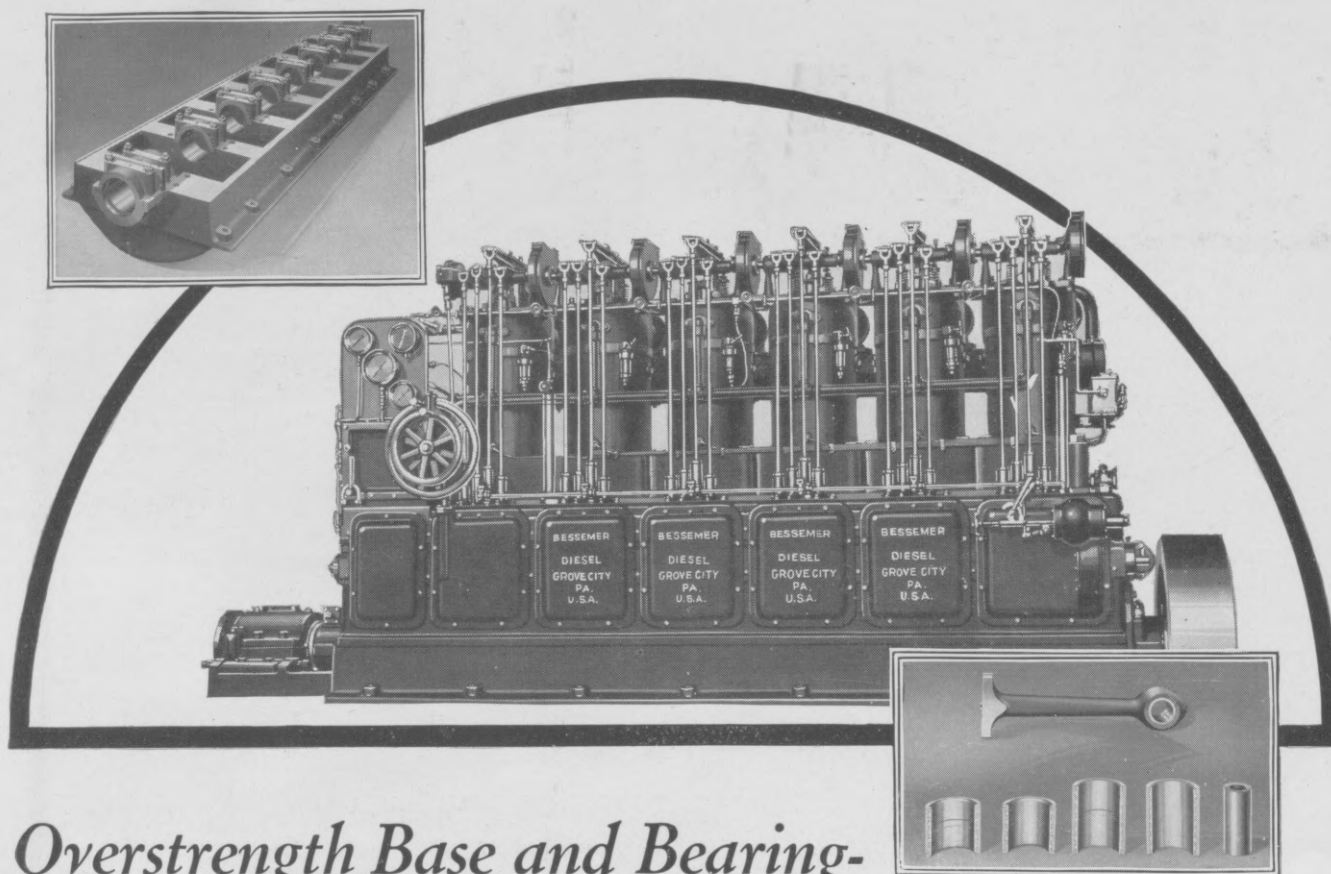
*Representatives in all principal industrial territories*



Send for important data on  
this equipment and economies  
resulting from its installation.







## *Overstrength Base and Bearing-Shell Add Years of Service to Bessemer Diesels*

The base and main bearings are the foundations for long life and continuous service of Bessemer-built Diesel engines.

Bases of Bessemer Diesel Engines are built to form a substantial support for the crankshaft, and are scientifically designed to give the maximum truss, both in cross section as well as in longitudinal directions.

The main bearings between each crank are supported by double walls. The bearings are full shell, lined with the finest non-ferrous metal, hand-scraped to fit the base and lubricated with a continuous pressure force feed lubrication system.

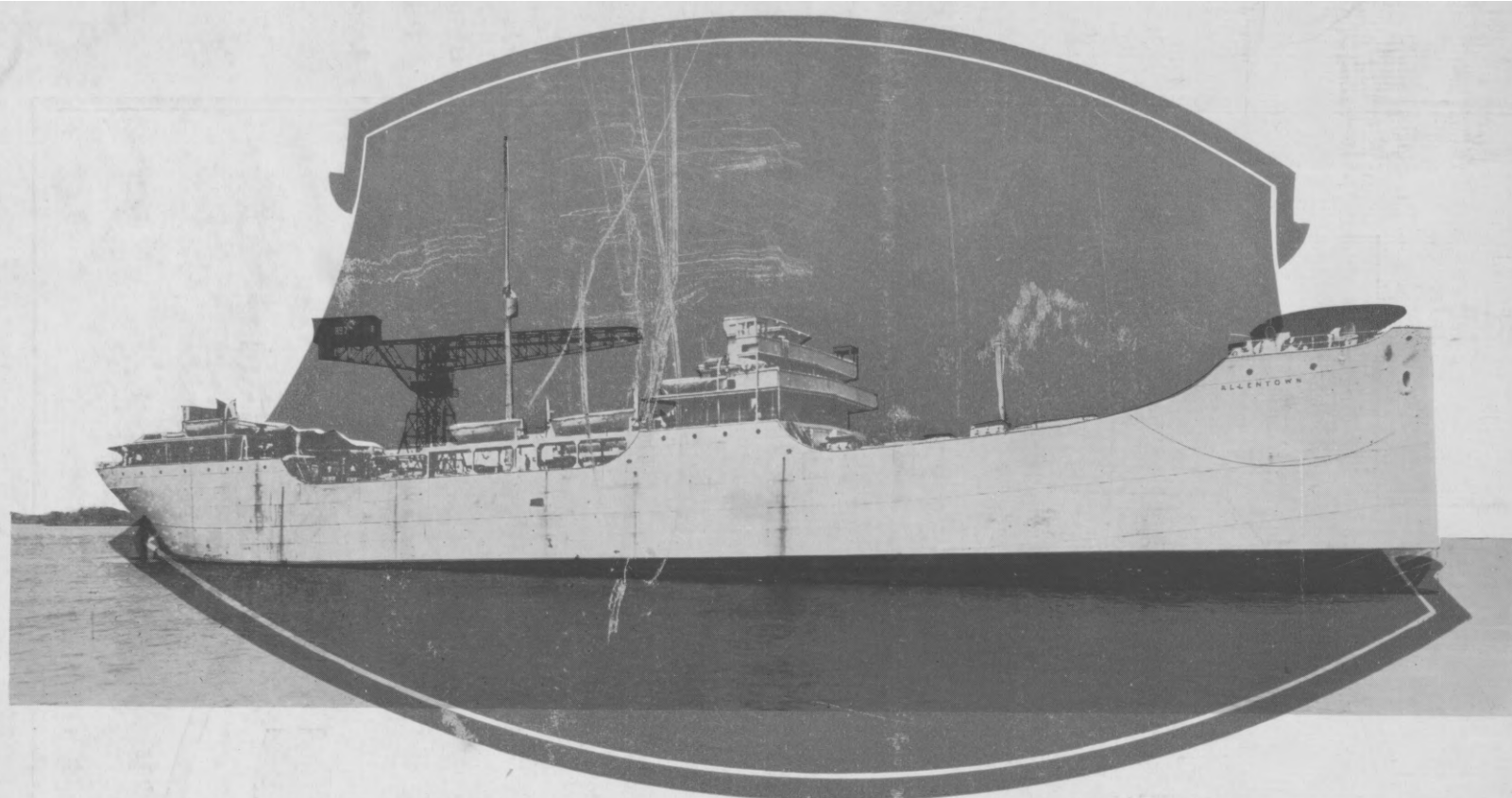
The outer and main bearings are provided with suitable lips and a sling ring is shrunk on the shaft which prevents oil leakage outside of the base. These recesses are drained back to the base to insure ample lubrication at a minimum of loss of lubricating oil. This also permits a cleanliness not possible with ordinary bearing design.

THE BESSEMER GAS ENGINE COMPANY  
14 Lincoln Avenue :: :: Grove City, Pa.

# BESSEMER

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DIESEL  ENGINES



## “J. H. VAN DYKE” LUX EQUIPPED

**M**OTOR room fires are extinguished without damage within a fraction of a minute. An accomplishment only possible with carbon dioxide Lux released.

So, the tanker “J. H. VAN DYKE” (formerly the S.S. Allentown), in her conversion has followed the European practice and is Lux protected.

The Lux System extinguishes fires above as well as below the floor plates. Carbon dioxide is easily removed by ventilation leaving no sludge to clean up.

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